POLYNUCLEAR TRANSITION METAL COMPLEXES OF AMINO- AND IMINOALCOHOLS

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POLYNUCLEAR TRANSITION METAL COMPLEXES OF

AMINO- AND IMINOALCOHOLS

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Summary

Several transition metal complexes with a variety of imino- and aminoalcohols as ligands were investigated. Single crystal X-ray diffraction analyses were carried out on all complexes and variable temperature magnetic susceptibility data were collected for all magnetically interesting compounds.

The two complexes which initiated this study, tetrakis [μ_3-(7-hydroxy-4-methyl-5-azahept-4-en-2-onato)-copper(II)] butanol (blue unstable crystals) and tetrakis[(methanol)μ_3- (7-hydroxy-4-methyl-5-azahept-4-en-2-onato)nickel(II)] were found to form discrete, tetrameric "cubane" units. The 2-aminoethanol oxygens act as triple-bridging atoms at four tetrahedrally disposed corners of a cube; the metals occupy the remaining four corners. Minor conformational changes in this unit causes the copper complex to exhibit distinctly different magnetic properties.

fac-Tri-μ-(disalicylaldazine)diiron(III) acetone crystallizes as discrete, dinuclear molecules. The crystallographically equivalent iron atoms are octahedrally coordinated. The three binucleating ligands, due to the geometric requirements of each, assume a facial geometry about each metal. The two octahedral coordination spheres do not share a common face but rather are separated by the

distance of the azine bond. Magnetic studies show that the effective moment of the complex exhibits only a slight decrease (5.5-5.1 BM) with temperature (29 - 98°K).

Two metal complexes of 1,3-diamino-2-propanol (DapoH) were structurally and magnetically characterized: trans-[(1,3-diamino-2-propanol)(1,3-diamino-2-propanolato) cobalt(III)] chloride dihydrate and the non-linear copper trimer [bis(N,N'-1,3-diamino-2-propanol)bis(μ-1,3-diamino-2-propanolato) tricopper(II)]iodide methanol. The "monomeric", octahedral cobalt complex forms one-dimensional infinite chains through hydrogen bonding of the trans-oxygens. The complex is diamagnetic. The non-linear trimeric cation contains two monoanionic ligands; each bridges the central copper(II) to a terminal copper(II) through the oxygen (one nitrogen of this ligand chelates to the central copper, the other nitrogen to a terminal copper). The terminal coppers each have their remaining coordination sites filled through chelation of two nitrogens of a neutral ligand; the protonated alcohol group is non-coordinating.

Magnetic studies show that the system is best defined by one coupling constant ($J= -98\ cm^{-1}$). This indicates that the terminal coppers are not magnetically coupled to any large degree.

A series of four similar complexes were prepared and structurally investigated: (A) Cu_2(Dapac)(OAc), (B) Cu_2(Dapsa)(OAc):$2CH_3CN$, (C) Cu_2(Dapsa)(OAc):CH_3OH and (D) Cu_2(Dapsa)(OAc) [Note: (Dapac= N,N'-2-hydroxypropylenebis (acetylacetoneiminato) and Dapsa= N,N'-2-hydroxypropylenebis(salicylaldiminato)]. Each dinuclear complex contains two four-coordinate copper(II) atoms bridged by the alkoxide oxygen of the propylene chain and by the oxygens (three atom bridge) of an acetate group. Square planar coordination about each copper(II) is achieved by chelation of the remaining alkoxide oxygens and the imine nitrogens of the binucleating ligand.

Complex A shows the weakest magnetic coupling (probably due to the bent nature of the structure) and complex B, which forms infinite chains, exhibits antiferromagnetic coupling. The structures of C and D exhibit unusual packing and they exhibit antiferromagnetic coupling; their magnetic susceptibilities can be fit to the simple susceptibility equation for a metal dimer.

The final complex reported is Cu(DapsaH):CH_3CN. It forms discrete monomers with the oxygen of the propylene chain protonated and non-coordinating; the remaining four chelating atoms of DapsaH coordinate to the copper(II) in a pseudo-square planar fashion. Steric requirements of the ligand leads to severe twisting as it coordinates and large deviations from ideal square planar geometry (toward tetrahedral) are observed. The system was assumed to have one unpaired electron with no pathway available for superexchange.

CHAPTER I

INTRODUCTION

History of Complexes

General

The study of "anomalous" magnetic behavior in transition metal complexes was initiated in 1915 by Lifschitz and Rosenbohm (1). They studied copper(II) acetate monohydrate and found it exhibits a subnormal magnetic moment at room temperature (1.43 BM). The structure of the compound was revealed some 38 years later, through X-ray crystallographic studies of van Niekerk and Schoening (2), to be the dimeric compound illustrated in Figure 1. From these studies, the field has now grown to encompass a large area which includes several elaborate structural-magnetic studies of dimers as well as trimers, tetramers and infinite one- and two-dimensional polynuclear complexes (3).

The theory necessary to treat the magnetic properties of these polynuclear systems was complete by 1932. Presently, this theory is being applied to specific isolated compounds and, more importantly, to general structural aspects of series of complexes.

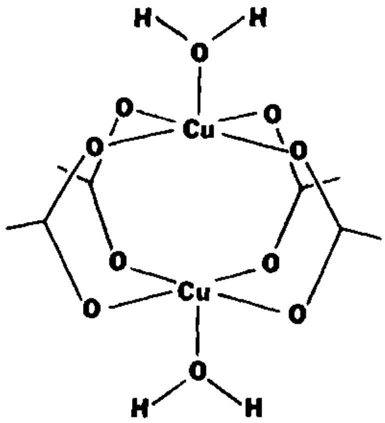


Figure 1. The Dimeric Structure of $[Cu(OAc)_2 \cdot H_2O]_2$.

Past studies of polynuclear complexes have repeatedly shown that conclusions based on elemental analysis, spectral and magnetic data alone can lead to incorrect structural assignments. Although structural-magnetic predictive methods can be applied with some success to simple systems, as Hodgson has shown with his series of varied bridging-oxygen angles (4), the need for an exact molecular structure of the molecule is apparent. This is especially true in view of the fact that subnormal magnetic moments of tetramers can be fit to dimeric susceptibilty equations by the inclusion of a "paramagnetic impurity" term. It is because of this type of problem that complete single crystal X-ray diffraction analyses should be done if variable temperature magnetic data are to be accurately and confidently interpreted.

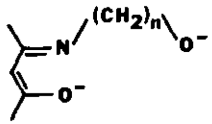
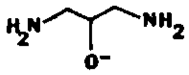
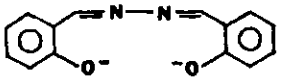
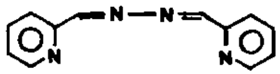
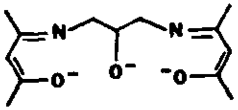
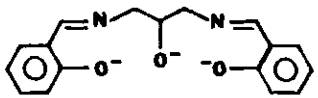
The study of amino- and iminoalcohol transition metal complexes has been a rich area for yielding unusual crystalline polynuclear compounds and different species are often obtained with only minor changes in reaction conditions. Therefore, investigations were undertaken on systems which had been previously prepared but not structurally illucidated. This also lead to studies of new complexes which, prior to this report, had not been investigated.

The direct purpose of this investigation is to better understand the correlation between molecular (crystal) structure and magnetic properties of polynuclear transition metal complexes of amino- and iminoalcohols. This is achieved through discriminate synthesis of related crystalline compounds, and the application of single crystal X-ray diffraction and variable temperature magnetic susceptibility methods to these compounds.

A list of abbreviations substituted for ligand names frequently used in this thesis are given in Table 1. The simple abbreviation represents the completely deprotonated anionic form of the ligand and the number of protons present is indicated by the addition of an "H" and a numerical subscript to the abbreviation (i.e. 1,3-diamino-2-propanol = DapoH).

Tridentate O-N-O Donors

Table 1. Abbreviations Used for Ligands.*

Ligand	Abbrev.	Description
	n=2; EIA	Dianion of the imine of 2,4-pentanedione and 2-aminoethanol
	n=3; PIA	Dianion of the imine of 2,4-pentanedione and 3-aminopropanol
	Dapo	Anion of 1,3-diamino-2-propanol
	DSALZ	Dianion of the diimine of hydrazine and salicylaldehyde
	PAA	Diimine of hydrazine and 2-pyridinaldehyde
	Dapac	Trianion of the diimine of 1,3-diamino-2-propanol and 2,4-pentanedione
	Dapsa	Trianion of the diimine of 1,3-diamino-2-propanol and salicylaldehyde

* "H" added to abbreviation denotes the no. of alcohol groups.

The first study to present magnetic evidence that complexes of tridentate iminoalcohols form polynuclear species was that of Kishita et. al. (5). Although they postulated the 1:1 complex of copper(II) and acetylacetone-mono(o-hydroxyanil) to be a dimer, it was shown by Barclay and coworkers (6) to adopt the "step" tetramer structure illustrated in Figure 2a. This was the first complex to be structurally characterized which exhibits a subnormal magnetic moment similar to copper(II) acetate monohydrate yet did not have the same type of structure.

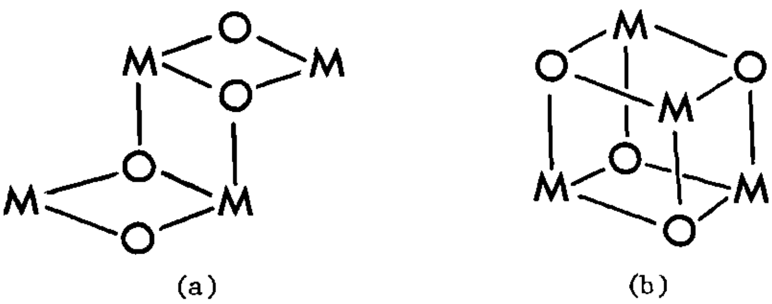


Figure 2. Tetrameric Types of Associations: (a) Step-like and (b) Cubane-like forms.

In 1966, Jäger prepared several copper and nickel complexes of EIA and PIA (7). Although formally these complexes exhibit coordination numbers of only three, he correctly concluded from spectral, magnetic and molecular weight determination data that they were polynuclear species. The green, paramagnetic compound Ni(EIA)(CH_3OH) was proposed to adopt the polymeric structure shown in Figure 3, whereas green Cu(EIA) was predicted to have tetrameric associations (no structure proposed).

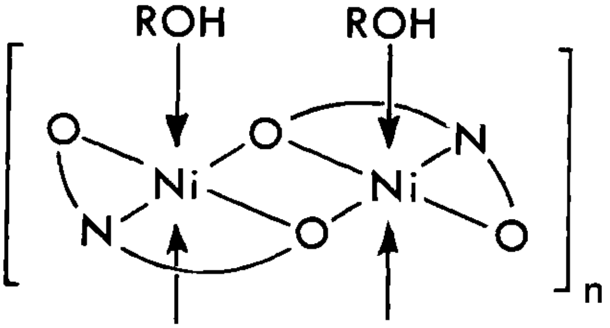


Figure 3. Jäger's Proposed Polymeric Structure of [Ni(EIA)(CH_3OH)]$_n$.

The first structural studies of these complexes appeared in 1970 (8, 9). The non-solvated, red-brown compounds Ni(EIA) and Cu(PIA) are oxygen bridged dimers which are diamagnetic and antiferromagnetically coupled, respectively. The investigations also determined that Cu(EIA) crystallizes into tetramerically associated cubane-like molecules (Figure 2b). The magnetic and structural comparisons of Cu(EIA) (tetramer, room temp. moment = 1.87 BM) to Cu(PIA) (dimer, room temp. moment = 0.41 BM) lead to a better understanding of the importance of the hybridization of the bridging alkoxide oxygen and its relation to spin exhange via a pi-mechanism. A second, unstable form of Cu(EIA) was also prepared.

Upon the completion of these structural and magnetic studies, several questions arose. What was the nature of the metastable form of Cu(EIA) which had been prepared, but not isolated in the crystalline form? Although Jäger's polymeric structure (Figure 3) of Ni(EIA)(CH_3OH) had been rejected, did the green complex assume a bent dimer with the alcohols occupying the fifth sites of each nickel or did the similarity of properties to those of Ni(acac)(CH_3O)(CH_3OH), which has a cubane structure, indicate a tetrameric form?

In an effort to answer these questions, investigations of these compounds were initialized. Also, the continuing interest of ferromagnetic and antiferromagnetic interactions combined with dimer-tetramer equilibria studies (10) gave other reasons to continue the study of these unusual compounds.

Quadridentate N-N Atom Bridged Species

Several complexes of neutral diimine, two-atom-bridging, quadridentate ligands (Figure 4) have been prepared and structurally characterized. Busch and coworkers initiated the study of this area in 1958 (11). Using PAA and BHA as ligands, they assigned structures based on magnetic and infra-red spectral data.

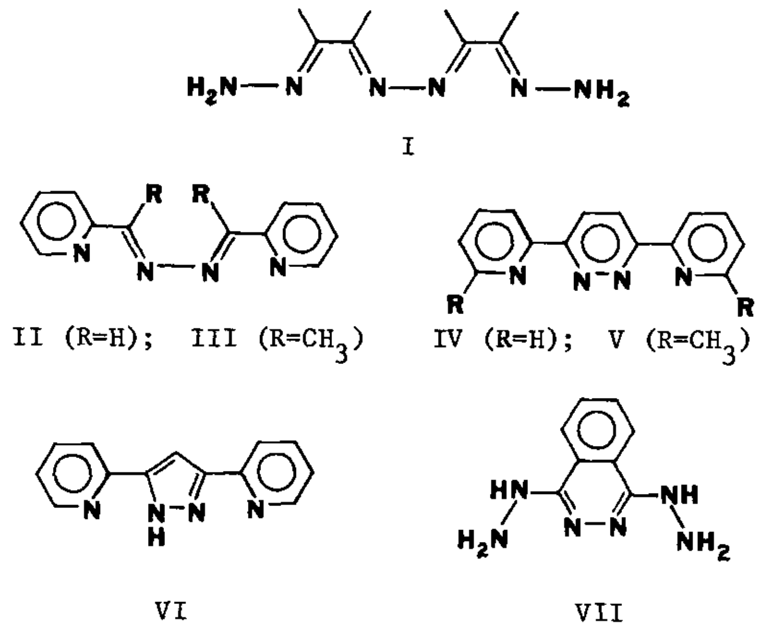
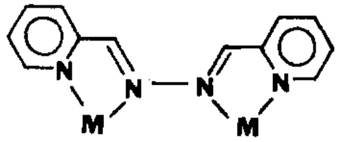


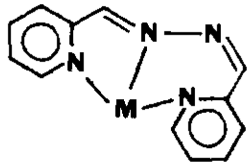
Figure 4. Ligand Structures of BHA (I), PAA (II), PMK (III), dppn (IV), Me_2dppn (V), dpplH (VI) and dhph (VII).

They concluded that the complexes crystallize with the following formulas: $M_2(PAA)_3^{4+}$ [M=Fe(II), Co(II), Ni(II)], $M(PAA)^{2+}$ [M=Fe(II), Ni(II), Cu(II)] and $M_2(BHA)_3^{4+}$ [M=Fe(II), Ni(II)]. They assumed the geometries illustrated in Figure 5.

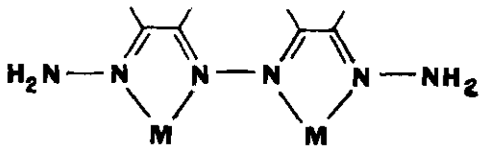
About a decade later Blake et.al. completed the first X-ray structural determination of the cation $[Ni(dhph)]_2$ (12). Armed with this definitive information, they prepared and structurally (via infra-red) and magnetically characterized numerous binuclear nickel(II)



(a) $M_2(PAA)_3^{4+}$



(b) $M(PAA)^{2+}$



(c) $M_2(BHA)_3^{4+}$

Figure 5. Proposed Coordinations of Neutral Azine Ligands. (a) M = Fe(II), Co(II) or Ni(II); (b) M = Fe(II), Ni(II) or Cu(II); (c) M = Fe(II) or Ni(II).

complexes of PAA, dppn, Me_2dppn, dpplH and dhph (13). Their concerted efforts lead to the discovery of the first series of Ni(II) binuclear systems to exhibit weak antiferromagnetic coupling (J/k = -8 to -34 deg).

Shortly thereafter, cobalt analogs of the binuclear nickel species were studied in depth. Blake and coworkers (14) published magnetic and infra-red results of a few Co(II) complexes of dhph, dppn and Me_2dppn. These, like the Ni(II) complexes, were antiferromagnetically coupled. Concurrently, workers at Cambridge (15) reported an X-ray structure determination of the cation $Co_2(PMK)_3^{4+}$ which had been synthesized by Stratton four years earlier (16). It has a twisted helical structure, and the twist was attributed to the interations between the bulky methyl groups (Figure 6).

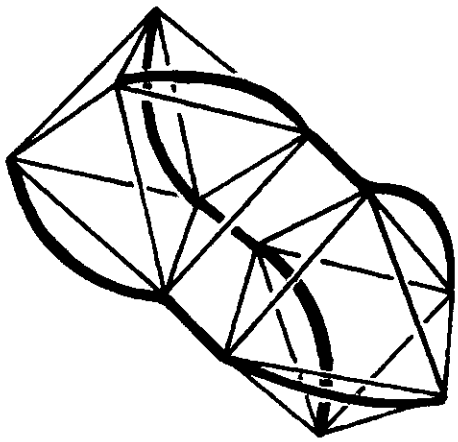


Figure 6. Helical Structure of the Cation $Co_2(PMK)_3^{4+}$.

No X-ray or other detailed structural reports have appeared in literature for coordination compounds of DSALZ. Some structural suggestions (based on infra-red) made by Sahoo et.al. imply that two distinct structures can be realized, depending upon the identity of the metal (17). They proposed that derivatives of Cu(II), Ni(II) and Co(II) form dinuclear species $[M(DSALZ)]_2^{4+}$ whereas with Fe(II), a tridentate asymmetric moiety was favored.

Because of the incompleteness of this report and the lack of information on DSALZ and transition metal complexes in general, it was decided to prepare and investigate (structurally and magnetically) these types of compounds.

Dapo Complexes

The majority of investigations of aminoalcohols complexes have been concerned with those of 2-aminoethanol (EtaH = $NH_2CH_2CH_2OH$). Few detailed structural and magnetic studies of systems with 1,3-diamino-2-propanol (Dapo) as a ligand have been carried out.

Although Dapo(H) is a simple molecule a variety of coordination modes are possible (Figure 7). As a bidentate ligand, it could chelate to a metal through either the two nitrogen atoms to form a six-membered ring (Figure 7a) or, analogous to EtaH, it could coordinate through one nitrogen and the oxygen (possibly bridging) to form a five-membered ring (Figure 7b,c). The ability of Dapo(H) to function as tridentate ligand is limited, for monomeric species, to *fac* coordination due to steric considerations (Figure 7d). However, its ability to act as a binucleating moiety has been invoked by at least one research group (18) (Figure 7e).

Another aspect of this ligand is its potential to hydrogen-bond in cases where both a deprotonated and neutral alcohol group are present. This behavior has been

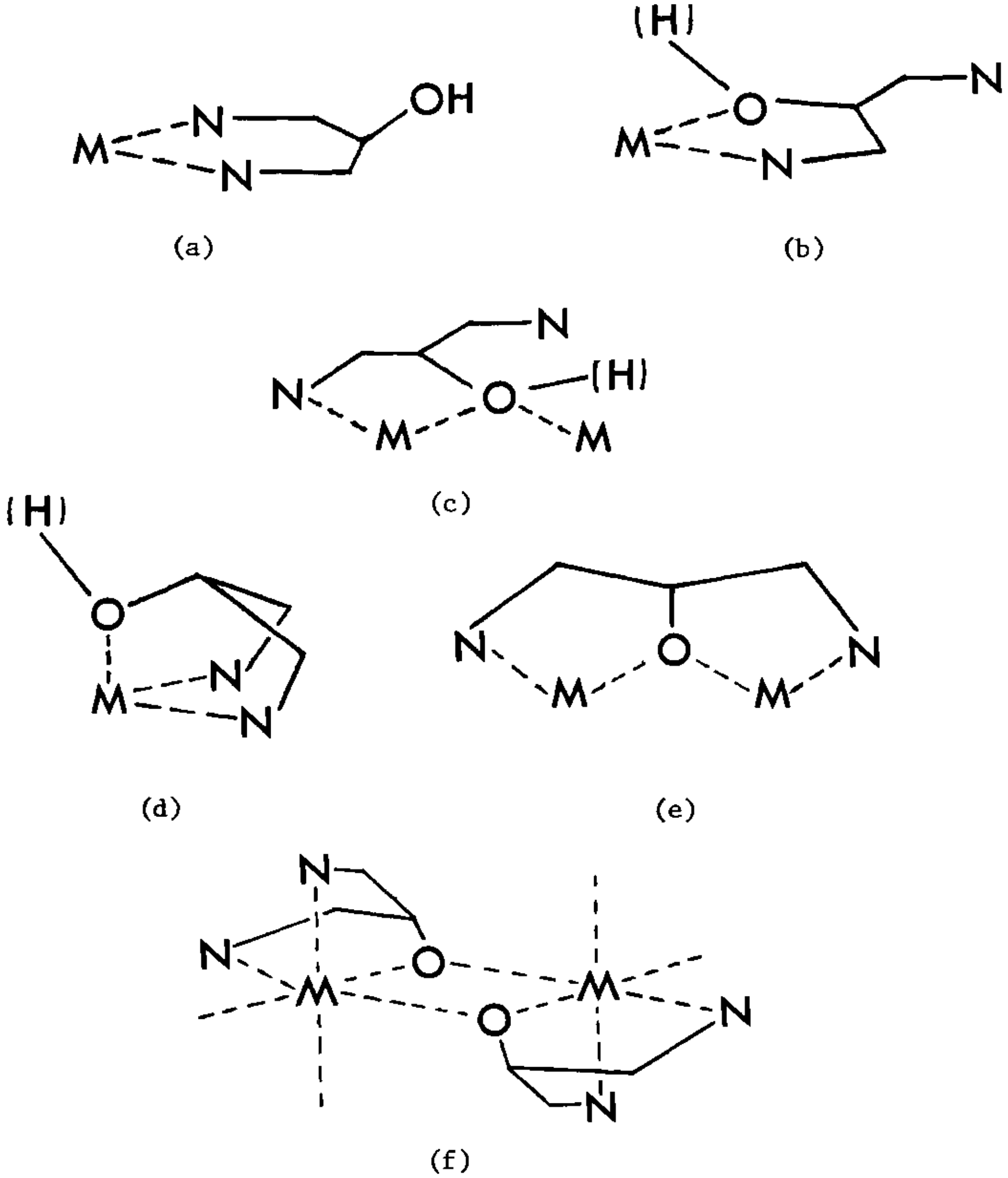


Figure 7. Coordination Modes Possible for Dapo Complexes.

observed for several complexes containing both EtaH and Eta (19). The two types of hydrogen bonded species which have been structurally characterized are sketched in Figure 8.

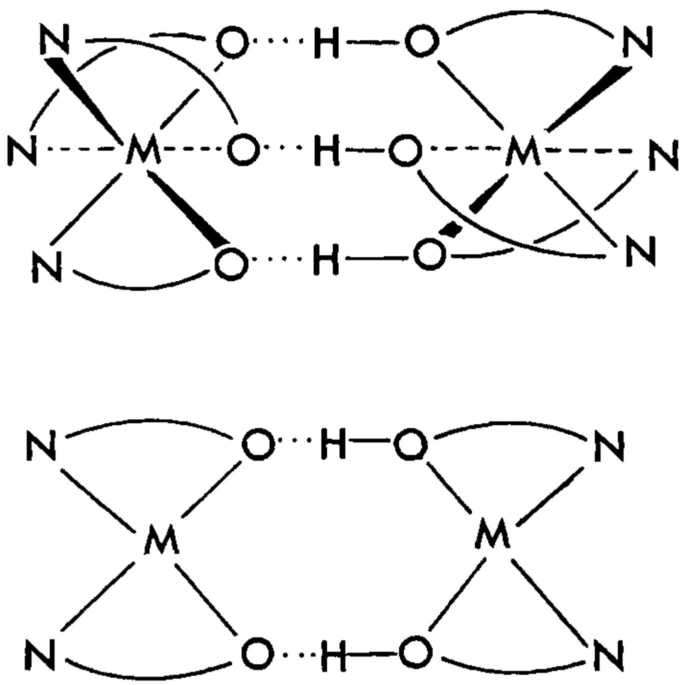


Figure 8. Hydrogen-Bonding in Metal Complexes of Ethanolamine.

The history of metal complexes of Dapo follows a rather long and wandering course, culminating in correct structural characterizations. In 1927, Mann (20) synthesized the compound $[Co(Dapo)_2]X \cdot 2H_2O$ (where X = Cl^-, I^- or SCN^-; originally misformulated as $[Co(DapoH)_2(OH)_2]$ X and confirmed by Breckenridge et. al. in 1939 (21)). It was not correctly formulated until 1974 when two groups (22, 23) independently synthesized and characterized the salts shown here:

$$[Co(Dapo)_2]^{+} \xrightarrow{H^+} [Co(Dapo)(DapoH)]^{++} \xrightarrow{H^+} [Co(DapoH)_2]^{+++}$$

Both studies concluded, based on spectral and ^{13}C nmr data, that all the complexes in the series adopt a <u>trans</u> geometry.

Näsänen and coworkers reported the preparation of the first structurally characterized copper(II) complex with Dapo as a ligand. The initial paper in 1970 (24) prematurely suggested a dimer (based only on magnetic analysis, density determinations and unit cell parameters). This was folowed up by in 1977 (25) by a complete structural determination showing that the complex actually crystallized as a trimer (Figure 9). Treating the complex as an equilateral triangle of copper(II) atoms the complete susceptibility curve could be fitted using the expression:

$$\chi_M = \frac{N\beta^2 g^2}{4\ kT} \left[\frac{5\ \exp(3J/kT) + 1}{\exp(3J/kT) + 1} \right] + N_\alpha$$

The resulting coupling constant value ($J = -79\ cm^{-1}$) indicated antiferromagnetic coupling between the copper atoms.

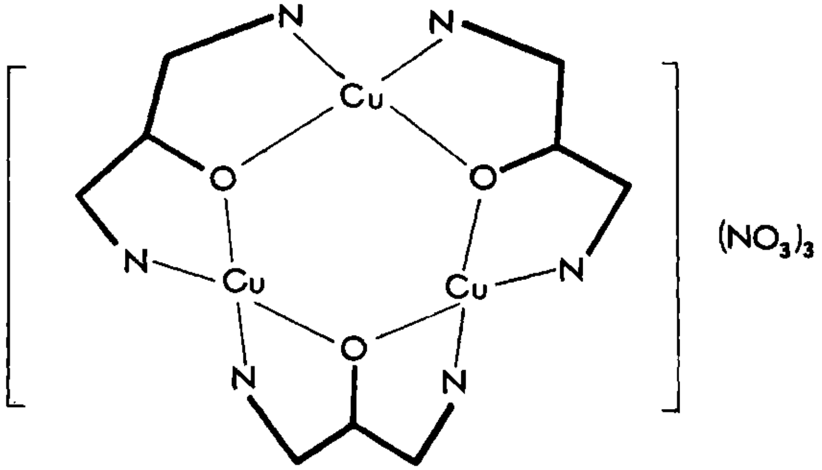


Figure 9. The Cyclic Copper Trimer $[Cu_3(Dapo)_3](NO_3)_3$.

The initial impetus for investigating these metal complexes of Dapo was two-fold: to attempt to prepare and study hydrogen bonded polynuclear analogs of the EtaH complexes and to shed more light on the little known coordination modes of the Dapo molecule with transition metals.

Charged Schiff Base Diimine Complexes

Most studies of quadridentate, planar ligands have been concerned with the N_2O_2 or N_4-donor type. This can be ascribed to the recent interest in porphyrin type, bioinorganic metal systems which bind dioxygen. There have been comparatively fewer investigations of charged diimines capable of pentadentate coordination.

Upon recognizing the diverse coordination modes which Dapo(H) assumes in metal complexes, diimine derivatives of this ligand were prepared; 1,3-diamino-2-propanol, condensed with two equivalents of acetylacetone or salicylaldehyde, yielded $DapacH_3$ and $DapsaH_3$, respectively.

These ligands could coordinate in two fundamentally different modes (Figure 10):

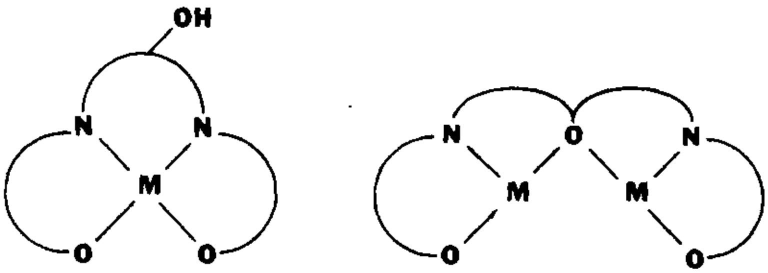


Figure 10. Fundamental Coordination Modes Possible for the Ligands Dapac and Dapsa.

as a tetradentate N_2O_2-donor or as a pentadentate binucleating ligand. The N_2O_2-donor type is illustrated as a monomer but these units could act as building blocks to form dimers, trimers, or tetramers, like the series of complexes studied by both Gruber (26) and Waters (27) (Figure 11).

There is only one report in literature concerning complexes of DapsaH. Dey and Sen (28) assigned, on the basis of infra-red data, a four coordinate structure to a 1:1 complex of palladium and DapsaH.

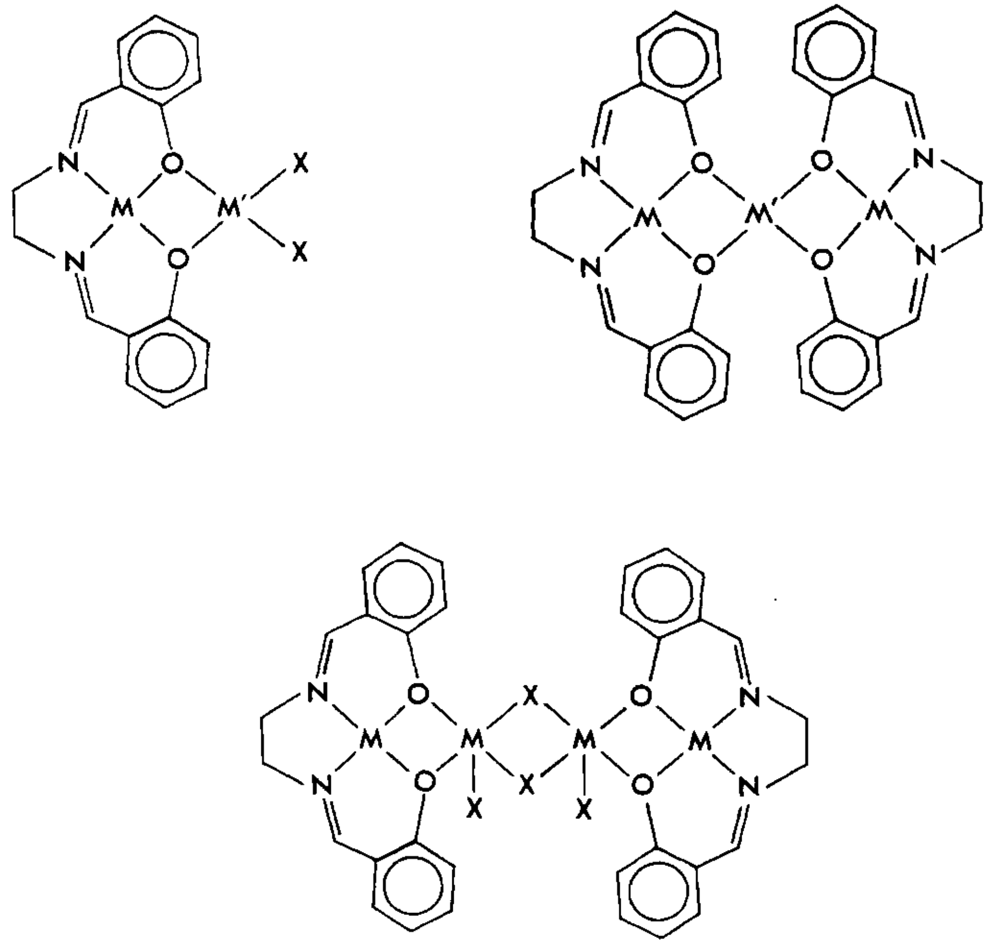


Figure 11. Polynuclear Complexes of salen Which have been Structurally Characterized.

The interesting and unusual transition metal complexes which other Schiff bases form, combined with the paucity of data on such diimine systems, lead to the initiation of a study to illucidate (structurally and magnetically) some copper(II) complexes of Dapac and Dapsa.

The structures of complexes which are described and discussed in this thesis can be conveniently subdivided into four categories.

(1) The tetramerically associated complexes with the imine of ethanolamine and acetylacetone as a ligand: $[Cu(EIA)]_4 \cdot C_4H_9OH$ and $[Ni(EIA)(CH_3OH)]_4$.

(2) The two atom bridged complex of iron(II) and disalicylazine: $Fe_2(DSALZ)_3 \cdot C_3H_6O$.

(3) The mixed ligand complexes containing both the protonated and deprotonated form of DapoH. The ionic compounds: $[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$ and $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.

(4) The complexes of the diimine formed by the condensation of Dapo with acetylacetone or salicylaldehyde: $Cu_2(Dapac)(OAc)$, $Cu_2(Dapsa)(OAc) \cdot 2CH_3CN$, $Cu_2(Dapsa)(OAc) \cdot CH_3OH$, $Cu_2(Dapsa)(OAc)$ and $Cu(DapsaH) \cdot CH_3CN$.

CHAPTER II

EXPERIMENTAL

Elemental Analyses

Carbon, hydrogen and nitrogen analyses were performed by Atlanta Microlab Inc., in Atlanta, Georgia. The results for the metal complexes are summarized in Table 2.

Magnetic Susceptibility Measurements

Magnetic susceptibility data were obtained in vacuum using the Faraday method over a temperature range of 98 to 298 °K. $Hg[Co(CNS)_4]$ was used as the calibrant. Diamagnetic corrections applied were those tabulated by Lewis and Figgis (29).

Preparation of Complexes

$[Cu(EIA)]_4 \cdot C_4H_9OH$

The ligand $EIAH_2$ was prepared by slowly adding neat 2-aminoethanol to an equimolar amount of neat 2,4-pentanedione. $EIAH_2$ (5.8 g, 40 mmol) was dissolved with stirring and heating in approximately 100 ml of methanol. This solution was treated with 40 mmol (2.2 g)

Table 2. Results of the Elemental Analyses of Metal Complexes.

Complex	% Found			% Calc.		
	C	H	N	C	H	N
*$[Cu(EIA)]_4$	41.14	5.51	6.87	41.06	5.43	6.84
$[Cu(EIA)]_2 \cdot CH_3CN$	42.68	5.61	9.29	42.65	5.60	9.33
$[Ni(EIA)(CH_3OH)]_4$	41.48	6.57	-	41.42	6.53	6.04
$Ni(EIA)(C_2H_5OH)$	44.40	6.99	-	43.94	6.98	5.70
$Fe_2(DSALZ)_3 \cdot C_3H_6O$	60.27	4.20	9.23	61.10	4.11	9.50
$[Co(Dapo)(DapoH)]C\ell_2 \cdot 2H_2O$	21.03	6.94	16.21	20.88	6.73	16.24
*$[Cu_3(Dapo)_2(DapoH)_2]I_4$	13.65	3.73	10.34	13.64	3.63	10.61
$Cu_2(Dapac)(OAc)$	41.26	5.05	6.40	41.18	5.08	6.41
*$Cu_2(Dapsa)(OAc)$	47.39	3.81	5.83	47.39	3.78	5.82
$Cu_2(Dapsa)(OAc) \cdot CH_3OH$	46.72	4.35	5.46	46.78	4.35	5.46
$Cu_2(Dapsa)(OAc)$	47.48	3.88	5.94	47.39	3.78	5.82
*Cu(DapsaH)	57.00	4.44	8.01	56.73	4.49	7.79

* These complexes were dried, and formulated as the non-solvated species.

of 85% potassium hydroxide pellets followed by 20 mmol (4.0 g) solid cupric acetate monohydrate. The green microcrystalline material which precipitated was recovered via filtering the hot solution and dried in vacuum. The crude product, 0.2 g, was redissolved in 40 ml of 2-butanol. The blue crystals which formed decomposed rapidly (0.5 to 2h) upon removal from solution. Because of this instability, crystals which were mounted had to be coated with epoxy cement to endure the single crystal X-ray data collection. This crystalline material exhibits a 7-10% weight loss upon decomposition in vacuo.

Cu(EIA)·½CH_3CN

The preparation of this complex is identical to that described in the previous synthesis except the green microcrystalline powder was recrystallized from acetonitrile.

[Ni(EIA)(CH_3OH)]$_4$

The method of preparation followed was that of Jager (7). Crystals suitable for single crystal X-ray analysis precipitated from the solution after one day. The unstable crystal mounted, was epoxy coated to avoid crystalline decomposition during data collection.

[Ni(EIA)(C_2H_5OH)]

The method of preparation of this complex is identical to that previously described except the decomposed material was recrystallized in a mixture of <u>m</u>-xylene and ethanol.

<u>$Fe_2(DSALZ)_3 \cdot C_3H_6O$</u>

The ligand ($DSALZH_2$) was prepared by slowly adding hydrazine (85%) to excess (greater than two equivalents) salicylaldehyde in a small amount of ethanol. The exothermic reaction yielded a bright yellow precipitate which was recovered via vacuum filtration and dried in vacuum for several hours. Anal. calculated for $C_{14}H_{12}N_2O_2$: C, 70.00; H, 5.04; N, 11.66. Found: C, 70.09; H, 5.03; N, 11.54.

To a warmed solution of 1 mmol (0.2 g) iron(II) dichloride tetrahydrate in 35 ml of methanol was added dropwise a solution of 1 mmol (0.25 g) $DSALZH_2$ in 50 ml methanol. The resulting deep brown solution was filtered hot and allowed to slowly reach room temperature in a Dewar flask. This microcrystalline material was then redissolved in hot acetone and cooled slowly again to yield deep brown crystals suitable for X-ray diffraction studies.

<u>$[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$</u>

The method of preparation followed was that of Okamoto and Barefield (23). To induce needle-like crystals of good quality, the final solution was slowly evaporated in air rather than with a stream of nitrogen.

$[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$

Cupric acetate monohydrate, 5 mmol (1.0 g), and 15 mmol (1.4 g) of 1,3-diamino-2-propanol were combined in approximately 75 ml of methanol. Subsequent addition of an aqueous solution of 15 mmol (2.2 g) of KI to the deep blue solution, followed by slow evaporation in air, yielded crystalline material adequate for single crystal X-ray studies.

$Cu_2(Dapac)(OAc)$

The ligand $DapacH_3$ was prepared by treating 40 mmol (4.0 g) of 2,4-pentanedione in 50 ml of ethanol with 20 mmol (1.8 g) of 1,3-diamino-2-propanol. The volume of the solution was reduced with a rotary evaporator and the ensuing microcrystalline powder was washed with cold acetone. Anal. calculated for $C_{13}H_{12}N_2O_3$: C, 61.38; H, 8.74; N, 11.02. Found: C, 61.39; H, 8.72; N, 11.01.

A hot solution of 50 ml of ethanol and 5 mmol (1.0 g) of cupric acetate monohydrate was treated with 6 mmol (1.5 g) $DapacH_3$ in 25 ml of ethanol. The resulting deep blue solution was filtered hot and slowly brought to room temperature in a Dewar flask. After several hours, the solution produced blue, uniform crystals suitable for single crystal X-ray studies.

$Cu_2(Dapsa)(OAc) \cdot 2CH_3CN$

The ligand was prepared by slowly adding 5 ml of an ethanolic solution of 10 mmol (0.9 g) DapoH to 40 ml of a hot ethanolic solution containing 20 mmol (2.5 g) of salicylaldehyde. (This preparation was followed in all subsequent syntheses in which Dapsa-metal complexes were prepared.) This deep yellow solution was then added dropwise to 13 mmol (2.6 g) of cupric acetate monohydrate dissolved in approximately 75 ml of ethanol. A small portion of the green powder which separated from the dark green solution was immediately dissolved in 10 ml of acetonitrile and evaporated to dryness. The resulting dark green crystals decomposed after being exposed to the air for a few days. Therefore, the crystal mounted for X-ray studies was coated with epoxy cement.

$Cu_2(Dapsa)(OAc) \cdot CH_3OH$

To 50 ml of a hot methanolic solution of 10 mmol (2.0 g) of cupric acetate monohydrate was slowly added a solution containing 5 ml of a methanolic solution (5 mmol, 1.5 g) of $DapsaH_3$ (Prepared as described above but using methanol as the solvent.) The ensuing dark green solution was filtered hot and left open to the air. Within a few hours, dark green uniform crystals separated from solution.

$Cu_2(Dapsa)(OAc)$

The non-solvated form in this series of compounds was prepared as follows: To a hot suspension of 10 mmol (2.0 g) of cupric acetate monohydrate and 50 ml of acetonitrile was added 10 ml of an ethanolic solution containing 5 mmol (1.5 g) $DapsaH_3$. The dark green solution which immediately ensued was filtered hot and brought to room temperature overnight in an insulated Dewar flask. The next day crystals suitable for single crystal X-ray diffraction studies were evident.

Cu(DapsaH)$\cdot CH_3CN$

This monomer was prepared by treating 150 ml of a hot ethanolic solution of 25 mmol (5.0 g) of cupric acetate monohydrate with 20 mmol (6.0 g) of an ethanolic solution of $DapsaH_3$. The olive green powder which suddenly precipitated was recovered and a small amount of it was dissolved in hot acetonitrile. Crystals suitable for single crystal X-ray diffraction studies were obtained upon allowing the acetonitrile solution to slowly reach room temperature in a Dewar flask. The crystalline material decomposed very quickly (10 - 60 min) once removed from the solution, so the crystal was coated several times with epoxy cement to prevent decomposition.

Crystallographic Information

General

The intensity data for all strucures were collected on a Syntex $P2_1$ four circle diffractometer equipped with a highly ordered graphite monochromator (Bragg 2θ angle = 12.2 degrees) using MoK_{α} radiation (λ = 0.71069 Å) at a takeoff angle of 6.5 degrees. The unit cell parameters and orientation matrix were determined on the accompanying Nova 1200 Series computer (8K memory).

Unless otherwise specified, fifteen reflections, located from initial phi rotation photographs and machine centered, were used in the least squares refinement of the lattice parameters and the orientation matrix. Once the crystal system was determined, several zero level axial reflections were collected and omega scans were completed to assure that the crystal had a satisfactory mosaic spread (i.e. peak widths at half height of less than 0.35 degrees). Three axial reflections were then chosen as standards to be monitored (set to recenter if intensity falls below 92% of the original value) after every 97 reflections. The scan width was set at 2.0 degrees for all structures and this was sufficient to collect all of the peak intensity.

Intensities were calculated from the total scan count (CT) and from initial (bdg 1) and final (bdg 2) background counts by the relationship:

$$I = CT - (bdg1 + bdg2)$$

The intensities were assigned standard deviations according to the equation:

$$\sigma(I) = [CT + (bdg1 + bdg2)]^{1/2}$$

Important crystallographic data for each structure determined are presented in Table 3.

Standard programs (30) were executed on the CDC Cyber 74 System. The necessary scattering factors for all atoms except hydrogens (31) were taken from those tabulated by Cromer and Waber (32). The scattering factors for all atoms in the structures with a larger atomic number than oxygen were corrected for the real and imaginary anomalous dispersion components (33).

Agreement factors were defined in the usual way as:

$$R = (\sum ||F_o|-|F_c||)/(\sum |F_o|)$$

and

$$R_w = [\sum w(|F_o| - |F_c|)^2 / \sum w(|F_o|)^2]^{1/2}$$

where $w = 4I/\sigma(I)^2$. In all least squares refinements, the quantity minimized was $w(|F_o - F_c|)^2$.

Table 3. Important Crystallographic Information for the Structures Solved and Refined for this Thesis.

	$[Cu(EIA)]_4 \cdot C_4H_9OH$	$[Ni(EIA)CH_3OH]_4$	$Fe_2(DSALZ)_3 \cdot C_3H_6O$	$[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$	$[Cu_3(Dapo)(DapoH)_2]I_4 \cdot CH_3OH$
COLOR	blue	green	dk. brown	red	blue
APPROX. SIZE (mm)	.75 x .50 x .50	.50 x .40 x .30	.50 x .50 x .30	.50 x .20 x .20	.30 x .20 x .10
CRYST. SYS.; SPACE GROUP	Monoclinic; $P2_1/c$ (#14†)	Orthorhombic; $P2_12_12_1$ (#19†)	Orthorhombic; Pnna (#52†)	Monoclinic; C2/c (#15†)	Monoclinic; $P2_1/c$ (#14†)
UNIT CELL PARAMETERS	a = 16.141(9) b = 11.590(3) c = 22.863(8) β = 108.95(4)° V = 4045.3(32)	a = 12.319(4) b = 25.909(6) c = 13.132(4) V = 4191.3(45)	a = 19.502(6) b = 16.151(3) c = 14.500(7) V = 4568.1(30)	a = 15.959(5) b = 8.079(2) c = 10.732(2) β = 105.42(2)° V = 1333.9(6)	a = 12.255(4) b = 12.999(5) c = 19.873(5) β = 97.45(2)° V = 3139.5(18)
CALC. DENSITY ($g\ cm^{-3}$)	1.47	1.47	1.34	1.72	2.30
OBS. DENSITY ($g\ cm^{-3}$)	α	α	1.37	1.73	2.29
# REFLS. COLLECTED	7760 (quadrant)	4220 (octant)	4140 (octant)	1351 (quadrant)	6460 (quadrant)
σ(I)/I	.333	.333	.333	.333	.333
# REFLS. ACCEPTED	5095	2818	2068	963	3577
2θ MAXIMA (deg)	50.00	50.00	50.00	50.00	50.00
RANGE OF SCAN RATE (deg/min)	7.32 - 29.30	3.45 - 29.30	7.32 - 29.30	4.88 - 29.30	4.88 - 29.30
SCAN WIDTH (deg)	2.0	2.0	2.0	2.0	2.0
STANDARD REFLS.	006;040;400	400;060;006	400;080;008	10 0 0;060;008	600; 040;008
METALS PER UNIT CELL	16	16	8	4	12
FINAL R	0.081	0.056	0.083	0.038	0.065
FINAL R_w	0.095	0.049	0.093	0.040	0.078

Table 3. (Continued).

	$Cu_2(Dapac)(OAc)$	$Cu_2(Dapsa)(OAc)\cdot 2\ CH_3CN$	$Cu_2(Dapsa)(OAc)\cdot CH_3OH$	$Cu_2(Dapsa)(OAc)$	$Cu(DapsaH)\cdot CH_3CN$
COLOR	dk. blue	dk. green	dk. green	dk. green	olive green
APPROX. SIZE (mm)	.80 x .50 x .20	.50 x .30 x .30	.50 x .40 x .20	.50 x .40 x .10	.40 x .20 x .20
CRYST. SYS.; SPACE GROUP	Monoclinic; $P2_1/n^{\Delta}$	Monoclinic; C2/c (#15†)	Orthorhombic; Pbca (#61†)	Monoclinic; $P2_1/c$ (#14†)	Monoclinic $P2_1/c$ (#14†)
UNIT CELL PARAMETERS	a = 11.980(6) b = 12.216(3) c = 12.259(9) β = 104.54(5)° V = 1736.5(15)	a = 19.075(4) b = 10.549(2) c = 11.741(3) β = 94.04(2)° V = 2356.6(8)	a = 9.707(2) b = 18.153(3) c = 22.572(9) V = 3977.2(20)	a = 17.968(3) b = 20.731(4) c = 9.826(1) β = 95.44(1) V = 3643.6(9)	a = 12.541(9) b = 18.394(8) c = 7.747(7) β = 91.16(7)° V = 1786.7(22)
CALC. DENSITY (g cm^{-3})	1.67	1.59	1.72	1.75	1.49
OBS. DENSITY (g cm^{-3})	1.65	∝	1.71	1.73	∝
# REFLS. COLLECTED	3395 (quadrant)	2315 (quadrant)	3914 (octant)	7088 (quadrant)	3509 (quadrant)
σ(I)/I	.333	.333	.333	.333	.286
# REFLS. ACCEPTED	2561	1704	2203	4025	954
2θ MAXIMA (deg)	50.00	50.00	50.00	50.00	50.00
RANGE OF SCAN RATE (deg/min)	3.32 - 29.30	3.32 - 29.30	2.02 - 29.30	3.91 - 29.30	4.88 - 29.30
SCAN WIDTH (deg)	2.0	2.0	2.0	2.0	2.0
STANDARD REFLS.	400;060;004	008;040;600	400;060;008	400;060;002	300;040;011
METAL CENTERS PER CELL	8	8	16	16	4
FINAL R	0.041	0.050	0.054	0.066	0.078
FINAL R_w	0.043	0.053	0.047	0.065	0.061

Δ Non-standard space group setting.

† "International Tables for X-ray Crystallography", Vol. I, Kynoch Press, Birmingham, England, 1952.

∝ Rapid crystalline decomposition prevented density determination.

Throughout this thesis all numbers in parenthesis indicate estimated standard deviations in the last significant digit.

Solution, Refinement and Description of Structures

The observed (FO) and calculated (FC) structure factors are listed in the appendix (Tables A - J) followed by the atomic positional and thermal parameters for each structure (Tables K - T).

R and R_w values for each complex at various stages of refinement are presented in Table 4. The initial residual represents the R value which resulted from least squares refinement of the atoms found in the Patterson synthesis (or E-map where direct methods were used). Further isotropic refinement of all non-hylrogen atoms located in successive Fourier calculations lead to the residuals shown in the third column of Table 4.

$[Cu(EIA)]_4 \cdot C_4H_9OH$

The structure of the epoxy coated blue crystal was solved with little difficulty after locating from the Patterson synthesis the four copper atoms in the asymmetric unit. With a non-improving residual value of approximately 0.11 (coppers oxygens and nitrogens anisotrpoically refined) a solvent molecule of 2-butanol was fit to the

Table 4. Number of Atoms in the Asymmetric Unit, 2θ Range of the Reflection Array, NO / NV and Residual Index Values (R and R_w) at Various Stages of Refinement for the Complexes Reported in this Thesis.

COMPOUND	ATOMS LOC. FROM PATTERSON SYN.	INITIAL R INITIAL R_w	NON-HYDROGEN ATOMS ISOTROPIC R, R_w	FINAL R FINAL R_w	# ATOMS LOC. IN ASYM. UNIT	2θ RANGE OF REFLECTION ARRAY	NO / NV
$[Cu(EIA)]_4 \cdot C_4H_9OH$	4 Coppers 4 Oxygens	0.287 0.340	0.130 0.146	0.081 0.095	49	7.03 - 23.82	5096 / 277
$[Ni(EIA)(CH_3OH)]_4$	4 Nickels*	0.293 0.323	0.084 0.084	0.056 0.049	52	3.66 - 14.96	2818 / 229
$Fe_2(DSALZ)_3 \cdot C_3H_6O$	1 Iron*	0.441 0.465	0.111 0.097	0.083 0.093	31	4.19 - 20.28	2068 / 226
$[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$	1 Cobalt 1 Oxygen 2 Nitrogens	0.492 0.480	0.058 0.063	0.038 0.040	15	5.69 - 23.33	963 / 97
$[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$	3 Iodines*	0.458 0.520	0.156 0.178	0.065 0.078	52	9.31 - 25.30	3577 / 228
$Cu_2(Dapac)(OAc)$	2 Coppers	0.337 0.354	0.078 0.086	0.041 0.043	31	4.23 - 21.19	2560 / 238
$Cu_2(Dapsa)(OAc) \cdot 2CH_3CN$	1 Copper	0.373 0.398	0.098 0.124	0.050 0.053	26	4.26 - 23.14	1704 / 177
$Cu_2(Dapsa)(OAc) \cdot CH_3OH$	2 Coppers	0.492 0.497	0.117 0.125	0.054 0.047	45	3.57 - 22.91	2203 / 176
$Cu_2(DApsa)(OAc)$	2 Coppers	0.566 0.598	0.105 0.107	0.066 0.065	56	6.29 - 22.54	4025 / 315
$Cu(DapsaH) : CH_3CN$	1 Copper	0.352 0.379	0.095 0.069	0.078 0.061	26	3.30 - 14.30	954 / 110

* Located using light atom methods.

five highest peaks (avg 1.5 e/Å^3) in the electron density map. Final refinement, including these additional atoms, reduced the residual to 0.09.

Tables A and K of the appendix contain the structure factors and the atomic parameters, respectively. Table 5 in this chapter lists some selected bond distances and angles for this complex.

The complex crystallizes with four discrete, tetrameric "cubane" moieties per unit cell (Figure 12). The idealized local symmetry of each copper is square pyramidal. Two oxygens of the tridentate ligand EIA occupy two trans basal positions with the nitrogen chelating to a third basal position. The remaining basal site and the apical position are filled by the ethanolamine alkoxide oxygens of two adjacent EIA ligands. The "cubane" unit is composed of four tetrahedrally disposed coppers with a tetrahedron of oxygen atoms acting as bridges. An interesting structural aspect of this distorted cube is that it assumes a tub conformation. That is, there are two pairs of long, mutually perpendicular copper-oxygen bonds (2.37 - 2.43 Å) while the remaining eight copper-oxygen bonds of the cube are comparatively shorter (1.94 - 1.98 Å). The tub-like conformation can be easily seen in Figure 12, where the longer bonds are drawn as unfilled stick bonds.

Table 5. Selected Interatomic Distances (Å) and Angles (deg) for $[Cu(EIA)]_4 \cdot C_4H_9OH$.

ATOMS n=	1	2	3	4	AVG
			DISTANCES		
O(n1)-C(n1)	1.45(1)	1.44(1)	1.43(2)	1.43(2)	1.44(1)
C(n1)-C(n2)	1.51(2)	1.53(2)	1.53(2)	1.54(2)	1.53(1)
C(n2)-N(n)	1.49(2)	1.51(2)	1.50(2)	1.47(2)	1.49(2)
N(n)-C(n4)	1.27(2)	1.32(2)	1.33(2)	1.34(2)	1.32(3)
C(n3)-C(n4)	1.55(2)	1.56(2)	1.51(2)	1.52(2)	1.54(2)
C(n4)-C(n5)	1.42(2)	1.43(2)	1.42(2)	1.42(2)	1.42(1)
C(n5)-C(n6)	1.39(2)	1.37(2)	1.32(2)	1.35(2)	1.36(3)
C(n6)-C(n7)	1.52(2)	1.61(2)	1.57(2)	1.57(2)	1.57(4)
C(n6)-O(n2)	1.24(2)	1.28(2)	1.31(2)	1.32(2)	1.29(3)
Cu(1)-Cu(n)	*	3.146(2)	3.109(3)	3.314(3)	*
Cu(2)-Cu(n)	*	*	3.314(3)	3.148(3)	*
Cu(3)-Cu(n)	*	*	*	3.131(3)	*
Cu(1)-O(n1)	1.962(8)	1.946(8)	*	2.425(8)	*
Cu(2)-O(n1)	*	1.975(8)	2.429(8)	1.976(8)	*
Cu(3)-O(n1)	1.955(8)	2.367(8)	1.974(8)	*	*
Cu(4)-O(n1)	2.430(8)	*	1.941(8)	1.959(8)	*
Cu(n)-O(n2)	1.898(9)	1.923(8)	1.920(9)	1.93(1)	*
Cu(n)-N(n)	1.94(1)	1.919(9)	1.91(1)	1.93(1)	*

ATOMS n=	1	2	3	4	AVG
			ANGLES		
Cu(n)-O(n1)-C(n1)	108.8(7)	109.8(7)	108.8(7)	110.6(7)	109.5(8)
Cu(n)-O(n2)-C(n6)	124.2(9)	122(1)	131(1)	120(1)	124(4)
Cu(n)-N(n)-C(n2)	110.5(8)	113.2(7)	113.5(8)	114.7(8)	113.0(15)
Cu(n)-N(n)-C(n4)	126(1)	125.7(9)	126.4(9)	124(1)	125.5(9)
O(n1)-Cu(n)-O(n2)	178.8(4)	180.0(3)	179.2(4)	177.1(4)	178.8(10)
O(n1)-Cu(n)-N(n)	86.3(4)	84.1(4)	85.0(4)	83.2(4)	84.7(11)
O(n2)-Cu(n)-N(n)	94.4(4)	96.0(4)	94.9(4)	96.2(5)	95.4(8)
O(n1)-C(n1)-C(n2)	109(1)	107(1)	109(1)	107(1)	108(1)
O(n2)-C(n6)-C(n5)	128(1)	129(2)	131(1)	127(2)	129(2)
O(n2)-C(n6)-C(n7)	116(1)	113(1)	110(1)	111(2)	113(2)
C(n2)-N(n)-C(n4)	124(1)	121(1)	120(1)	120(1)	121(2)
N(n)-C(n2)-C(n1)	110(1)	106(1)	107(1)	107(1)	108(2)
N(n)-C(n4)-C(n3)	119(1)	122(1)	122(1)	121(1)	121(1)
N(n)-C(n4)-C(n5)	124(1)	122(1)	122(1)	121(1)	122(1)
C(n3)-C(n4)-C(n5)	117(1)	116(1)	116(1)	119(1)	117(1)
C(n4)-C(n5)-C(n6)	124(1)	125(2)	125(1)	128(2)	126(2)
C(n5)-C(n6)-C(n7)	115(1)	118(2)	120(1)	122(2)	119(3)

Table 5. (Continued).

ATOMS	ANGLE	ATOMS	ANGLE
O11 - Cu1 - O41	81.9(3)	Cu1 - O11 - Cu3	105.1(4)
O11 - Cu1 - O21	86.3(3)	Cu1 - O11 - Cu4	97.4(3)
O21 - Cu1 - O41	75.2(3)	Cu3 - O11 - Cu4	90.5(3)
N1 - Cu1 - O21	165.7(4)	Cu3 - O11 - C11	125.1(7)
N1 - Cu1 - O41	115.9(4)	Cu4 - O11 - C11	125.4(7)
O21 - Cu2 - O31	81.0(3)	Cu1 - O21 - Cu2	106.7(3)
O21 - Cu2 - O41	86.0(3)	Cu1 - O21 - Cu3	91.7(3)
O31 - Cu2 - O41	74.2(3)	Cu2 - O21 - Cu3	98.3(3)
N2 - Cu2 - O31	112.3(4)	Cu1 - O21 - C21	123.8(7)
N2 - Cu2 - O41	167.0(4)	Cu3 - O21 - C21	122.6(7)
O31 - Cu3 - O11	86.9(3)	Cu2 - O31 - Cu3	96.4(3)
O31 - Cu3 - O21	82.7(3)	Cu2 - O31 - Cu4	91.5(3)
O21 - Cu3 - O11	75.8(3)	Cu3 - O31 - Cu4	106.2(4)
N3 - Cu3 - O11	168.0(4)	Cu4 - O31 - C31	126.4(7)
N3 - Cu3 - O21	111.9(3)	Cu2 - O31 - C31	122.8(7)
O41 - Cu4 - O11	81.9(3)	Cu1 - O41 - Cu2	90.7(3)
O41 - Cu4 - O31	86.9(3)	Cu1 - O41 - Cu4	97.6(3)
O11 - Cu4 - O31	75.5(3)	Cu2 - O41 - Cu4	106.2(4)
N4 - Cu4 - O11	105.1(4)	Cu1 - O41 - C41	119.6(7)
N4 - Cu4 - O31	169.9(4)	Cu2 - O41 - C41	127.2(7)

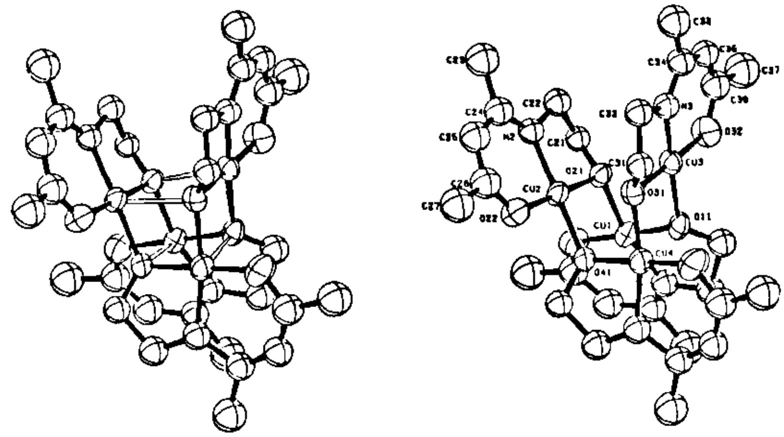


Figure 12. Stereoview of the Tetramer $[Cu(EIA)]_4 \cdot C_4H_9OH$. Solvent Molecule and Numbering Scheme for the #1 and #4 Ligands Omitted for Clarity. Unfilled Stick Bonds Represent the Longer Bonds in the Cu_4O_4 Cube Moiety.

Although it is not crystallographically necessary, the bond distances and angles for analogous parts of the tetramer are approximately equivalent. This is evident from the average bond distances and angles and their standard deviation values which are listed in Table 5.

$[Ni(EIA)(CH_3OH)]_4$

The structure was solved by direct methods using the program MULTAN; the program was allowed to choose origin-defining reflections and the correct solution was apparent from the Figure-of Merit index. Positions of all the nickel atoms were obtained from the initial E-map and all other non-hydrogen atoms were located in successive difference Fourier calculations.

Tables B and L in the appendix contain the structure factors and the atomic parameters, respectively, for the structure. Table 6 in this chapter lists the selected bond distances and angles for the final structure.

The structure consists of discrete, tetrameric, cubane-like molecules. A stereoview of the molecule is presented in Figure 13.

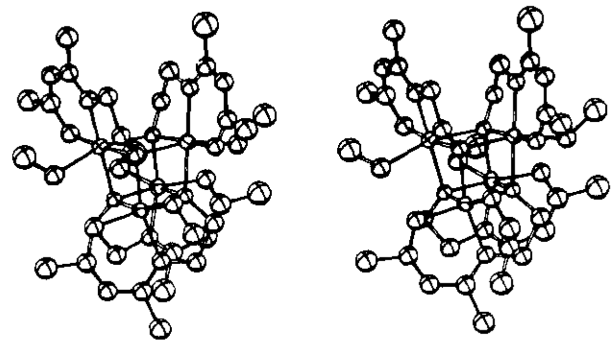


Figure 13. Stereoview of the Cubane Complex $[Ni(EIA)(CH_3OH)]_4$.

Although each nickel atom of the tetramer is crystallographically independent, the coordination arrangement around each is very similar. Each nickel atom is coordinated to an EIA ligand through the nitrogen and

Table 6. Selected Interatomic Distances (Å) and Angles (deg) for $[Ni(EIA)(CH_3OH)]_4$.

Atoms n =	1	2	3	4	Avg.
	Interatomic Distances				
Ni(n)-O(n1)	2.051(8)	2.032(7)	2.030(7)	2.020(7)	2.033(11)
Ni(n)-O(n2)	1.978(8)	1.998(8)	1.996(7)	1.991(8)	1.991(8)
Ni(n)-N(n)	1.93(1)	1.98(1)	1.98(1)	1.99(1)	1.97(2)
Ni(n)-O(n3)	2.17(8)	2.245(8)	2.215(8)	2.186(8)	2.21(3)
O(n1)-C(n1)	1.45(1)	1.45(1)	1.42(1)	1.43(1)	1.44(1)
O(n2)-C(n6)	1.32(1)	1.31(1)	1.28(1)	1.32(1)	1.31(2)
O(n3)-C(n8)	1.46(2)	1.47(2)	1.44(2)	1.45(2)	1.45(1)
N(n)-C(n2)	1.49(1)	1.46(1)	1.46(1)	1.45(1)	1.47(2)
N(n)-C(n4)	1.29(1)	1.34(1)	1.33(1)	1.30(1)	1.32(2)
C(n1)-C(n2)	1.57(2)	1.54(2)	1.60(2)	1.50(2)	1.55(4)
C(n4)-C(n5)	1.40(2)	1.41(2)	1.38(2)	1.46(2)	1.41(3)
C(n5)-C(n6)	1.37(2)	1.32(2)	1.42(2)	1.31(2)	1.36(4)
C(n3)-C(n4)	1.56(2)	1.54(2)	1.54(2)	1.55(2)	1.55(1)
C(n6)-C(n7)	1.50(2)	1.58(2)	1.51(2)	1.56(2)	1.54(3)
Ni(1)-Ni(n)		3.052(3)	3.210(2)	3.056(2)	
Ni(2)-Ni(n)			3.065(2)	3.198(2)	
Ni(3)-Ni(n)				3.056(3)	

Atoms n,n' =	1,4	2,1	3,2	4,3	Avg.
Ni(n)-O(n'1)	2.054(7)	2.032(7)	2.023(7)	2.055(7)	2.037(13)
Ni(n)-O(n"1)	2.122(7)	2.112(7)	2.115(7)	2.130(7)	2.120(7)

Atoms n =	1	2	3	4	Avg.
	Angles About Ni				
O(n2)-Ni(n)-O(n3)	93.1(3)	93.5(3)	95.2(3)	74.8(4)	93.9(9)
O(n2)-Ni(n)-N(n)	93.9(3)	94.5(4)	93.5(3)	94.4(4)	94.1(4)
O(n3)-Ni(n)-N(n)	92.8(3)	70.5(4)	90.7(3)	89.3(4)	91(1)
O(n1)-Ni(n)-O(n3)	94.5(3)	94.4(3)	93.1(3)	113.3(3)	94.0(6)
O(n1)-Ni(n)-O(n2)	172.1(3)	170.8(3)	171.4(3)	171.6(3)	171.5(5)
O(n1)-Ni(n)-N(n)	83.8(3)	83.7(3)	84.4(4)	83.8(3)	83.9(3)

Table 6. (Continued).

Atoms n,n' =	1,4	2,1	3,2	4,3	Avg.
N(n)-Ni(n)-O(n'1)	165.8(3)	164.1(4)	166.1(3)	165.6(3)	165.4(8)
O(n2)-Ni(n)-O(n'1)	99.3(3)	99.8(3)	98.5(3)	98.3(3)	99.0(6)
O(n1)-Ni(n)-O(n'1)	83.8(3)	83.3(3)	84.7(3)	84.6(3)	84.1(6)
O(n3)-Ni(n)-O(n'1)	81.3(3)	101.6(3)	81.3(3)	87.6(4)	83(3)

Atoms n,n',n" =	1,4,3	2,1,4	3,2,1	4,3,2	Avg.
O(n'1)-Ni(n)-O(n"1)	82.9(3)	82.8(3)	81.5(3)	81.5(3)	82.0(5)
O(n1)-Ni(n)-O(n"1)	78.6(3)	79.1(3)	79.3(3)	79.0(3)	79.0(3)
O(n3)-Ni(n)-O(n"1)	162.6(3)	171.8(3)	161.8(3)	162.7(3)	165(4)
N(n)-Ni(n)-O(n"1)	102.2(3)	103.5(3)	105.0(3)	104.5(4)	104(1)
O(n2)-Ni(n)-O(n"1)	94.6(3)	92.5(3)	93.2(3)	93.5(3)	93.5(8)

Atoms n =	1	2	3	4	Avg.
			Ligand Angles		
Ni(n)-O(n1)-C(n1)	107.8(6)	107.3(6)	108.9(6)	107.6(5)	107.9(6)
O(n1)-C(n1)-C(n2)	109.3(9)	109.8(9)	108.9(9)	111.2(8)	109.8(9)
C(n1)-C(n2)-N(n)	109.1(9)	109.3(9)	110(1)	111(1)	110(1)
N(n)-C(n4)-C(n3)	117(1)	118(1)	120(1)	119(1)	118(1)
N(n)-C(n4)-C(n5)	122(1)	123(1)	122(1)	123(1)	122(1)
C(n4)-C(n5)-C(n6)	131(1)	129(1)	130(1)	128(1)	130(1)
C(n5)-C(n6)-C(n7)	123(1)	120(1)	121(1)	119(1)	121(1)
C(n5)-C(n6)-O(n2)	123(1)	129(1)	124(1)	127(1)	126(2)
C(n6)-O(n2)-Ni(n)	124.1(7)	121.3(7)	124.5(7)	122.5(8)	123(1)
Ni(n)-O(n3)-C(n8)	126.3(8)	127.2(8)	129.2(7)	120.6(8)	126(3)

two oxygen atoms of the ligand. In addition, each nickel atom is coordinated to methanol oxygen and to the alkoxide oxygen atoms, O1, of two adjacent ligands. The numbering system employed is identical to that used in the complex $[Cu(EIA)]_4 \cdot C_4H_9OH$ with the additional methanol molecule of the nickel structure labeled as O(n3) and C(n8). The coordination about each nickel is tetragonally-distorted octahedron. The three donor atoms of the coordinated ligand and one bridging alkoxide from an adjacent ligand form the basal plane with the shorter distances (1.93 - 2.06 Å). The methanol oxygen and the other alkoxide oxygen occupy the axial positions with the longer distances (2.11 - 2.25 Å). The methanol coordinated to Ni(2) is bent toward the nitrogen (N2) to give an angle of 70.4 degrees compared to the average angle of 91.0 degrees. The methanol coordinated to Ni(4) is bent toward O2 to give an angle of 74.8 compared to an average angle of 93.9 degrees for the other three groups.

$Fe_2(DSALZ)_3 \cdot C_3H_6O$

The structure was solved by direct methods using the program MULTAN; the program was allowed to choose origin-defining reflections and the correct solution was apparent from the Figure-of-Merit index. The iron(III) atom was located from the E-map and all other non-hydrogen atoms were found in the successive difference Fourier calculations.

Table C and M in the appendix contain the structure factors and the atomic parameters from the final refinement, respectively. Table 7 presents the selected bond distances and angles for the complex.

$Fe_2(DSALZ)_3 \cdot C_3H_6O$ crystallizes as discrete dimers. The asymmetric unit contains one half of a dinuclear unit; the numbering system for the molecule is shown in Figure 14.

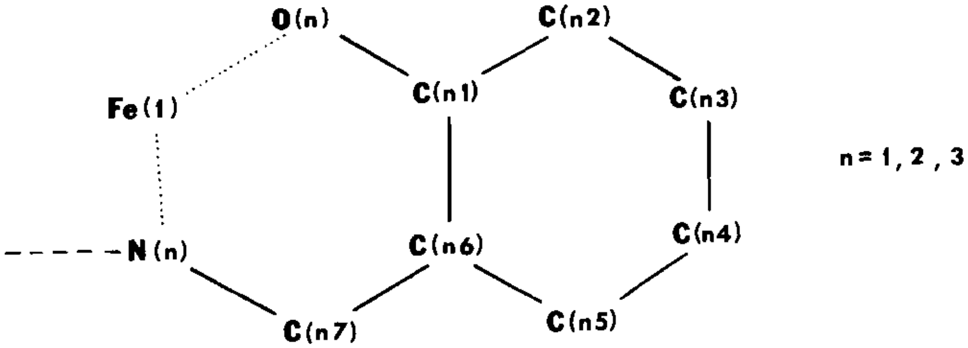


Figure 14. Numbering Scheme for $Fe_2(DSALZ)_3$.

The two-fold symmetry imposed by the space group Pnna generates the remaining portion of the dimer (Figure 15). The iron atom is octahedrally coordinated to three oxygens and three nitrogens in a facial manner. The two octahedra

Table 7. Selected Bond Distances (Å) and Angles (deg) for the Complex $Fe_2(DSALZ)_3 \cdot C_3H_6O$.

ATOMS n=	1	2	3
		DISTANCES	
Fe(1)-O(n)	1.906(8)	1.907(9)	1.906(7)
Fe(1)-N(n)	2.189(9)	2.17(1)	2.188(8)
O(n)-C(n1)	1.32(2)	1.27(2)	1.30(1)
N(n)-C(n7)	1.32(1)	1.30(2)	1.30(1)
C(n1)-C(n2)	1.43(2)	1.42(2)	1.42(1)
C(n2)-C(n3)	1.36(2)	1.39(2)	1.38(2)
C(n3)-C(n4)	1.37(3)	1.34(2)	1.36(2)
C(n4)-C(n5)	1.40(2)	1.43(2)	1.40(2)
C(n5)-C(n6)	1.46(2)	1.42(2)	1.38(2)
C(n6)-C(n7)	1.45(2)	1.47(2)	1.43(2)
C(n6)-C(n1)	1.37(2)	1.44(2)	1.42(1)
N(n)-N(n')	*	*	1.39(1)
Fe(n)-Fe(n')	3.944(4)	*	*
		ANGLES	
Fe(1)-O(n)-C(n1)	135.9(9)	136.9(9)	133.3(7)
Fe(1)-N(n)-C(n7)	127.2(8)	127.8(8)	124.7(7)
O(n)-C(n1)-C(n2)	118(1)	120(2)	119(1)
O(n)-C(n1)-C(n6)	123(1)	122(1)	123(1)
N(n)-C(n7)-C(n6)	122(1)	122(1)	126(1)
C(n6)-C(n1)-C(n2)	119(1)	117(2)	118.5(9)
C(n1)-C(n2)-C(n3)	120(2)	120(2)	121(1)
C(n2)-C(n3)-C(n4)	123(2)	124(3)	121(1)
C(n3)-C(n4)-C(n5)	120(1)	119(2)	119(2)
C(n4)-C(n5)-C(n6)	117(2)	119(2)	118(2)
C(n5)-C(n6)-C(n7)	112(1)	115(2)	116(1)
C(n5)-C(n6)-C(n1)	122(1)	121(1)	121(1)
C(n1)-C(n6)-C(n7)	126(1)	124(1)	123(1)

All atom parameters given for atoms within asymmetric unit.

Table 7. (Continued).

ATOMS	ANGLE	ATOMS	ANGLE
N(2')-Fe(1)-O(3)	168.5(3)	O(1)-Fe(1)-O(3)	100.1(4)
N(3)-Fe(1)-O(1)	168.4(3)	O(1)-Fe(1)-N(1)	84.7(4)
N(1)-Fe(1)-O(2')	169.7(4)	N(3)-Fe(1)-N(2')	83.6(3)
O(2')-Fe(1)-O(1)	98.4(4)	N(3)-Fe(1)-O(3)	85.0(3)
O(2')-Fe(1)-N(2')	84.5(4)	N(3)-Fe(1)-N(1)	84.6(3)
O(2')-Fe(1)-O(3)	94.9(4)	N(1)-Fe(1)-N(2')	85.6(4)
O(2')-Fe(1)-N(3)	91.5(4)	N(1)-Fe(1)-O(3)	94.2(4)
O(1)-Fe(1)-N(2')	91.3(4)		

X related to X' by the symmetry transformation: x,1/2-y,1/2-z

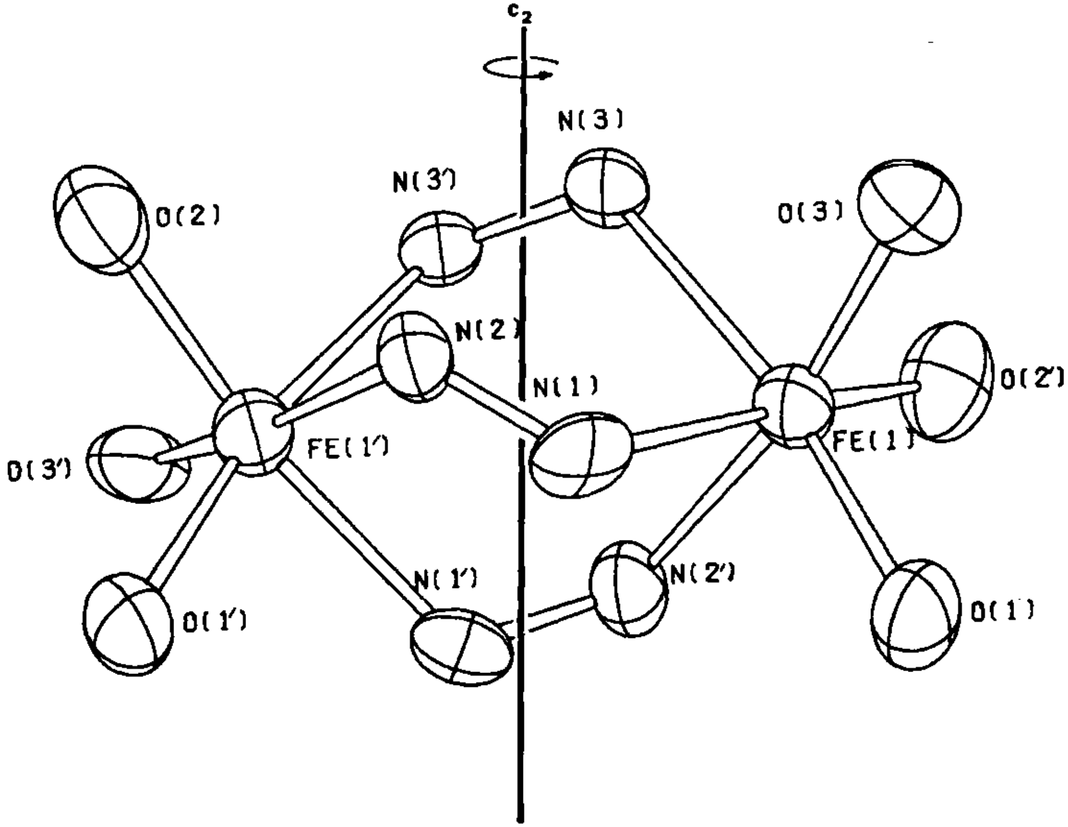


Figure 15. A View of the Dimer $Fe_2(DSALZ)_3$ Omitting the Acetone Molecule of Solvation. Atom X Related to X' by Rotation Through the Two-fold Axis (Heavy Line Approximately Parallel to the Plane of the Paper).

composing the dimer (Fe(1) - Fe(1') dist. = 3.944 Å) do not share a common face but rather are separated by the distance of the N-N azine bond (1.39 Å). The site midway between the Fe(1) and Fe(1') atoms assumes a trigonal prismatic geometry with respect to the two faces. There is an average deviation of 24 degrees away from the eclipsing of the nitrogen atoms. Each crystallographically independent ligand has similar structural paramaters.

Two complete data sets were collected on separate crystals in an effort to satisfactorily refine this structure. Although the second specimen gave much stronger diffraction, the structure did not refine below an R value of 0.12. Based on the analytical results and several peaks in the difference fourier (range 1.1 - 1.8 e/$Å^3$), an acetone molecule postioned on the two-fold axis was found to to best fit the observed data. Disorder problems prevented sharp refinement of the solvent atoms so the fractional coordinates and temperature factors of these atoms were input at fixed values.

The magnetic moment of this complex shows a slight decrease (5.5 - 5.1 BM) with temperature (298 - 98 °K); the values are in the normal range for a high spin d^5 complex.

$[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$

Due to the number of molecules in the unit cell, the position of the cobalt atom in the asymmetric unit was fixed at the special position (.00, .00, .00). The successive difference Fourier calculations revealed the positions of the remaining non-hydrogen atoms and also one hydrogen atom (HBND). Other hydrogens were located geometrically (C - H dist.= .95) and included in the final refinement, varying their positional parameters and setting their temperature factors at 5.0.

Tables D and N in the appendix contain the structure factors and atomic parameters, respectively. Table 8 lists the selected interatomic distances and angles for the complex.

Local geometry around the cobalt atom is octahedral with a slight trigonal distortion due to the chelation of the tridentate ligand. The oxygen atoms of the Dapo and DapoH ligands are trans to each other and, since the cobalt atom is on an inversion center, the bond distances of the cobalt to the protonated and deprotonated oxygens are crystallographically equivalent (as are the analogous cobalt-nitrogen bond distances).

The gross crystal structure revealed octahedral units interacting through hydrogen bonding along the crystallographic c-axis, to form infinite linear chains

Table 8. Selected Interatomic Distances (Å) and Angles (deg) for $[Co(Dapo)(DapoH)]C\ell_2 \cdot 2H_2O$.[a,b]

ATOMS	DIST.	ATOMS	DIST.
Co1 - O1	1.901(3)	N2 - C2	1.500(5)
Co1 - N1	1.963(4)	C2 - C3	1.514(6)
Co1 - N2	1.967(3)	C1 - C3	1.517(6)
O1 - C3	1.438(5)	O1 - O1''	2.420(6)
N1 - C1	1.496(5)	O1 - HBND	1.01(13)
HBND - HBND''	0.60(20)	O1 - HBND''	1.46(13)

ATOMS	ANGLE	ATOMS	ANGLE
O1 - Co1 - N2	86.7(1)	Co1 - N1 - C1	107.3(2)
O1 - Co1 - N1	86.7(1)	Co1 - N1 - C2	107.3(2)
N1 - Co1 - N2	85.7(1)	O1 - C3 - C2	104.9(3)
O1 - Co1 - N1'	93.3(1)	O1 - C3 - C1	107.1(3)
O1 - Co1 - N2'	95.9(1)	C3 - C1 - N1	107.1(3)
N1 - Co1 - N2'	94.3(1)	C3 - C2 - N2	107.8(3)
Co1 - O1 - C3	101.4(2)	O1 - HBND - O1''	156.5(5)

a X related to X' by inversion.
b X related to X'' by the transformation; -x,y,1/2-z.

(Figure 16). The distance between the oxygens involved in hydrogen bonding (O(1) and O(1'')) is 2.42 Å. Although the hydrogen (HBND) is required by symmetry to be on a two-fold axis and to be equidistant from the oxygens, when the positional parameters of this hydrogen were refined, the highest point of electron density refined off of the two fold axis. This implies that the hydrogen is disordered in the structure.

$[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$

The positions of the three iodine atoms were obtained by using the program MULTAN; the program was allowed to choose origin-defining reflections and the correct solution was apparent from the Figure-of-Merit index. The remaining non-hydrogen atoms were located in successive difference Fourier calculations.

Tables E and O in the appendix list the structure factors and atomic parameters , respectively. Table 9 contains the selected interatomic distances and angles for the trimer.

The compound crystallizes in discrete, trimeric units. The trinuclear cation (Figure 17) contains a central,

four coordinate copper(II) chelated to the two deprotonated ligands through the oxygen and one nitrogen of each ligand with a cis arrangement. Each of the deprotonated ligands is

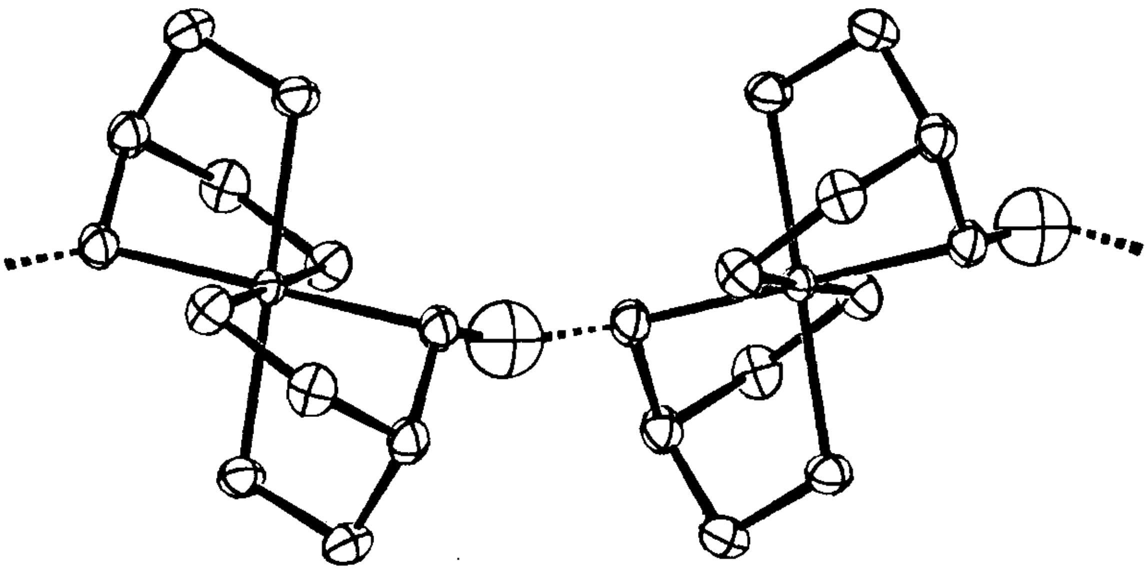


Figure 16. Molecular Structure of the Cation $[Co(Dapo)(DapoH)]^{2+}$. Dashed Bonds Indicate Intermolecular Linear Chain H-bonding.

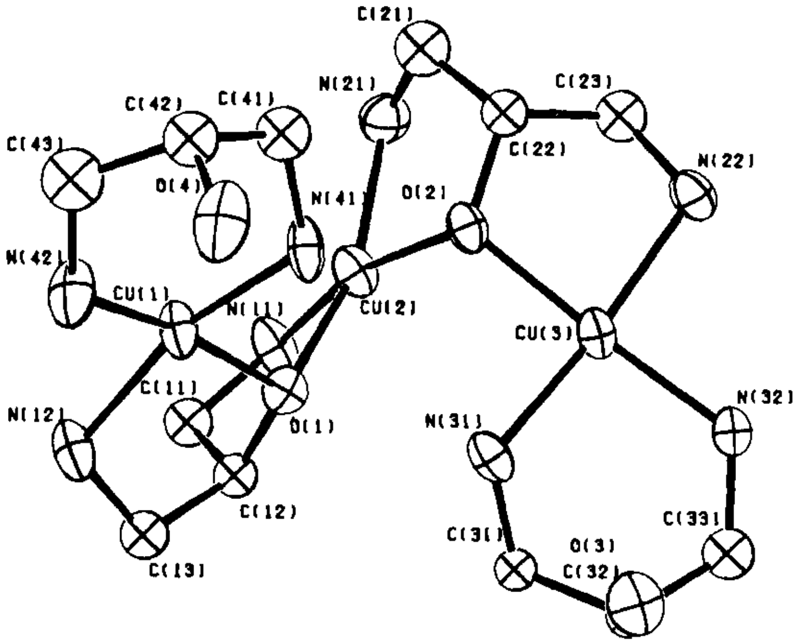


Figure 17. A View of the Trinuclear Cation of the Complex Whose Formula is $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$. Hydrogen Atoms Omitted for Clarity.

also coordinated to a terminal copper(II) through the oxygen (bridging) and the remaining nitrogen. The square planar coordination of each terminal copper (II) is completed by the two nitrogens of a neutral ligand; the alcohol groups of the neutral ligand are not coordinated. The Cu1 - Cu2 - Cu3 angle is 95.8 degrees. Although there is no crystallographic symmetry imposed on the molecule, analogous bond distances and angles within the molecule are equivalent (Table 9).

The least squares plane analyses (Table 10.) for the trimeric species revealed that of the three metal coordination spheres, the central one is most distorted from planarity. However, a terminal copper(II), Cu(1), lies farthest from the best fit plane (0.213 Å) compared to Cu(2) and Cu(3) lying only 0.022 Å and 0.099 Å, respectively, from the plane.

The results of the variable temperature magetic study for the trimer are presented in Table 11.

$\underline{Cu_2\text{(Dapac)(OAc)}}$

The two copper(II) atoms in the asymmetric unit were located via a Patterson synthesis. The remaining non-hydrogen atoms were found from successive difference Fourier calculations. All hydrogen atoms were located geometrically (C - H dist = 0.95 Å) and their parameters refined, setting the temperature factors constant at 5.0.

Table 9. Selected Interatomic Distances (Å) and Angles (deg) for $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.

ATOMS	DIST.	ATOMS	DIST.
Cu(1) - Cu(2)	3.368(4)	N(11) - C(11)	1.46(2)
Cu(2) - Cu(3)	3.394(3)	N(12) - C(13)	1.48(3)
Cu(1) - O(1)	2.02(1)	N(21) - C(21)	1.47(3)
Cu(1) - N(12)	2.02(2)	N(22) - C(23)	1.49(3)
Cu(1) - N(41)	2.03(2)	N(31) - C(31)	1.44(2)
Cu(1) - N(42)	2.05(2)	N(32) - C(33)	1.48(3)
Cu(2) - O(1)	1.99(1)	N(41) - C(41)	1.50(3)
Cu(2) - O(2)	1.96(1)	N(42) - C(43)	1.42(3)
Cu(2) - N(11)	2.00(2)	C(11) - C(12)	1.54(3)
Cu(2) - N(21)	2.01(2)	C(12) - C(13)	1.53(3)
Cu(3) - O(2)	2.00(1)	C(21) - C(22)	1.50(3)
Cu(3) - N(22)	2.03(2)	C(22) - C(23)	1.53(3)
Cu(3) - N(31)	2.02(2)	C(31) - C(32)	1.52(3)
Cu(3) - N(32)	2.03(2)	C(32) - C(33)	1.53(3)
O(1) - C(12)	1.41(2)	C(41) - C(42)	1.54(3)
O(2) - C(22)	1.45(2)	C(42) - C(43)	1.59(3)
O(3) - C(32)	1.45(2)	OSOLV - CSOLV	1.33(3)
O(4) - C(42)	1.45(3)		

ATOMS	ANGLE	ATOMS	ANGLE
O(1)-Cu(1)-N(41)	92.3(6)	O(1)-C(12)-C(11)	109(2)
O(1)-Cu(1)-N(12)	83.3(6)	O(1)-C(12)-C(13)	109(2)
N(12)-Cu(1)-N(42)	92.3(7)	N(11)-C(11)-C(12)	109(2)
N(41)-Cu(1)-N(42)	89.7(7)	N(12)-C(13)-C(12)	109(2)
O(1)-Cu(2)-O(2)	94.0(5)	C(11)-C(12)-C(13)	112(2)
O(1)-Cu(2)-N(11)	86.1(6)	Cu(2)-O(2)-Cu(3)	118.2(6)
O(2)-Cu(2)-N(21)	85.7(6)	Cu(2)-O(2)-C(22)	112(1)
N(11)-Cu(2)-N(21)	99.8(7)	Cu(2)-N(21)-C(21)	105(1)
O(2)-Cu(3)-N(22)	84.5(6)	Cu(3)-O(2)-C(22)	112(1)
O(2)-Cu(3)-N(31)	91.4(6)	Cu(3)-N(22)-C(23)	106(1)
N(22)-Cu(3)-N(32)	92.7(6)	O(2)-C(22)-C(21)	111(2)
N(31)-Cu(3)-N(32)	91.0(7)	O(2)-C(22)-C(23)	108(2)
Cu(2)-N(11)-C(11)	107(1)	N(21)-C(21)-C(22)	110(2)
Cu(2)-O(1)-C(12)	110(1)	N(22)-C(23)-C(22)	109(2)
Cu(1)-O(1)-Cu(2)	114.4(6)	C(21)-C(22)-C(23)	111(2)
Cu(1)-O(1)-C(12)	113(1)	Cu(3)-N(31)-C(31)	116(1)
Cu(1)-N(12)-C(13)	108(1)	Cu(3)-N(32)-C(33)	120(1)

Table 9. (Continued).

ATOMS	ANGLE	ATOMS	ANGLE
O(3)-C(31)-C(32)	110(2)	Cu(1)-N(42)-C(43)	118(2)
O(3)-C(32)-C(33)	108(2)	O(4)-C(42)-C(41)	109(2)
N(31)-C(31)-C(32)	115(2)	O(4)-C(42)-C(43)	105(2)
N(32)-C(33)-C(32)	114(2)	N(41)-C(41)-C(42)	111(2)
C(31)-C(32)-C(33)	113(2)	N(42)-C(43)-C(42)	114(2)
Cu(1)-N(41)-C(41)	118(1)	C(41)-C(42)-C(43)	113(2)

Table 10. Least Squares Plane Analyses for the complex $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation of the plane involving N(21), O(2), O(1) and N(11):			
$0.8620x + 0.4658y + 0.2001z = 6.2324$			
O(1)	-0.419	N(21)	-0.235
O(2)	0.269	Cu(2)	0.022
N(11)	0.320		
(b) Equation of the plane involvong O(1), N(12), N(42) and N(41):			
$-0.7866x + 0.5403y + 0.2988z = 0.8074$			
O(1)	0.097	N(42)	0.029
N(12)	-0.081	Cu(1)	0.213
N(41)	-0.073		
(c) Equation of the plane involving O(2), N(22), N(31) and N(32):			
$-0.1606x - 0.9475y + 0.2764z = -4.3711$			
O(2)	-0.046	N(32)	-0.047
N(22)	0.046	Cu(3)	-0.099
N(31)	0.049		

[a]Direction cosines of the plane refer to the orthogonal axis system a,b,c^*.

[b]All atoms weighted at unity.

Table 11. Diamagnetic Correction (χ_{dia}), Molar Susceptibilities (χ_M^{corr}) and Effective Moments (μ_{eff}) for the Complex $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.

T (°K)	$\chi_M^{corr} \times 10^6$ cgs	μ_{eff} (BM)
	$\chi_{dia} = -0.000162$	
298	1011	1.57
278	1044	1.53
258	1115	1.52
238	1172	1.50
218	1215	1.46
198	1277	1.43
178	1319	1.38
158	1395	1.33
138	1476	1.28
118	1556	1.22
98	1717	1.17

Tables F and P in the appendix contain the structure factors and atomic parameters, resectively, for the dinuclear complex. Selected bond distances and angles for the complex are listed in Table 12. In Table 13 are presented the results of the least squares plane analyses for the coordination spheres about the copper(II) atoms. The coordination sphere of Cu(1) shows larger deviations from planarity than that of Cu(2), but both are significantly distorted.

The copper(II) complex with Dapac and OAc as ligands exists as discrete, binuclear molecules in the solid state (Figure 18) The two copper(II) atoms are four coordinate and bridged by both the isopropoxide oxygen of Dapac and the oxygens (three atoms bridge) of the acetate ligand. The remaining two coordination sites on each copper(II) are filled by the alkoxide oxygens and the imine nitrogens of the pentadentate, binucleating ligand.

An interesting structural feature of the dinuclear compound is the dihedral angle between the two coordination spheres of the coppers, 123 degrees. The bent nature of the complex is discussed later with regard to the magnetic properties which it exhibits.

Variable temperature magnetic studies were undertaken and the results are listed in the first column of Table 19.

$\underline{Cu_2(Dapsa)(OAc)\cdot 2CH_3CN}$

Table 12. Selected Interatomic Distances (Å) and Angles (deg) for Cu_2(Dapac)(OAc).

ATOMS	DIST.	ATOMS	DIST.
Cu(1) - O(11)	1.882(3)	Cu(2) - O(21)	1.884(3)
Cu(1) - O(31)	1.938(3)	Cu(2) - O(31)	1.916(3)
Cu(1) - O(41)	1.938(3)	Cu(2) - O(42)	1.941(3)
Cu(1) - N(11)	1.907(4)	Cu(2) - N(21)	1.903(4)
O(11) - C(12)	1.281(6)	O(21) - C(22)	1.285(5)
O(41) - C(41)	1.244(5)	O(42) - C(41)	1.248(5)
N(11) - C(14)	1.303(5)	N(21) - C(24)	1.302(6)
N(11) - C(31)	1.461(6)	N(21) - C(33)	1.461(6)
C(11) - C(12)	1.523(7)	C(21) - C(22)	1.523(7)
C(12) - C(13)	1.361(7)	C(22) - C(23)	1.370(6)
C(13) - C(14)	1.422(7)	C(23) - C(24)	1.409(6)
C(14) - C(15)	1.509(7)	C(24) - C(25)	1.504(6)
C(31) - C(32)	1.515(6)	C(32) - C(33)	1.507(6)
Cu(1) - Cu(2)	3.225(2)		
O(31) - C(32)	1.428(5)		
C(41) - C(42)	1.507(6)		

ATOMS	ANGLE	ATOMS	ANGLE
O(11)-Cu(1)-O(41)	88.6(1)	O(21)-Cu(2)-O(42)	88.3(1)
O(31)-Cu(1)-O(41)	92.0(1)	O(31)-Cu(2)-O(42)	91.8(1)
O(11)-Cu(1)-O(31)	170.0(1)	O(21)-Cu(2)-O(31)	173.1(1)
O(11)-Cu(1)-N(11)	94.6(1)	O(21)-Cu(2)-N(21)	95.2(1)
O(31)-Cu(1)-N(11)	86.2(1)	O(31)-Cu(2)-N(21)	86.2(1)
O(41)-Cu(1)-N(11)	171.5(1)	O(42)-Cu(2)-N(21)	167.3(1)
Cu(1)-O(31)-C(32)	111.6(2)	Cu(2)-O(31)-C(32)	110.2(2)
Cu(1)-O(11)-C(12)	124.9(3)	Cu(2)-O(21)-C(22)	124.5(3)
Cu(1)-O(41)-C(41)	129.1(3)	Cu(2)-O(42)-C(41)	131.5(3)
Cu(1)-N(11)-C(31)	111.8(3)	Cu(2)-N(21)-C(33)	111.3(3)
Cu(1)-N(11)-C(14)	126.8(3)	Cu(2)-N(21)-C(24)	126.1(3)
C(31)-N(11)-C(14)	121.3(4)	C(33)-N(21)-C(24)	122.5(3)
O(11)-C(12)-C(11)	113.6(4)	O(21)-C(22)-C(21)	114.1(4)
O(31)-C(32)-C(31)	109.4(3)	O(31)-C(32)-C(33)	109.3(3)
O(41)-C(41)-C(42)	117.1(4)	O(42)-C(41)-C(42)	116.3(4)
N(11)-C(14)-C(13)	121.1(4)	N(21)-C(24)-C(23)	121.9(4)
N(11)-C(14)-C(15)	120.7(4)	N(21)-C(24)-C(25)	121.2(4)

Table 12. (Continued).

ATOMS	ANGLE	ATOMS	ANGLE
C(11)-C(12)-C(13)	120.1(4)	C(21)-C(22)-C(23)	120.0(4)
C(12)-C(13)-C(14)	126.0(4)	C(22)-C(23)-C(24)	126.3(4)
C(13)-C(14)-C(15)	118.1(4)	C(23)-C(24)-C(25)	116.9(4)
Cu(1)-O(31)-Cu(2)	114.6(1)		
C(31)-C(32)-C(33)	112.3(4)		
O(41)-C(41)-O(42)	126.6(4)		

Table 13. Least Squares Plane Analyses for the complex $Cu_2(Dapac)(OAc)$.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation of the plane involving O(11), O(31), O(41) and N(11):			
$-0.3674x - 0.1036y + 0.9242z = -2.5267$			
O(11)	-0.825	N(11)	0.224
O(31)	0.865	Cu(1)	0.160
O(41)	0.378		
(b) Equation of the plane involving O(21), O(31), O(42) and N(21):			
$-0.1419x + 0.9575y + 0.2513z = 1.9864$			
O(21)	0.146	N(21)	-0.196
O(31)	0.150	Cu(2)	0.336
O(42)	-0.153		

[a] Direction cosines of the plane refer to the orthogonal axis system a,b,c^*.

[b] All atoms weighted at unity.

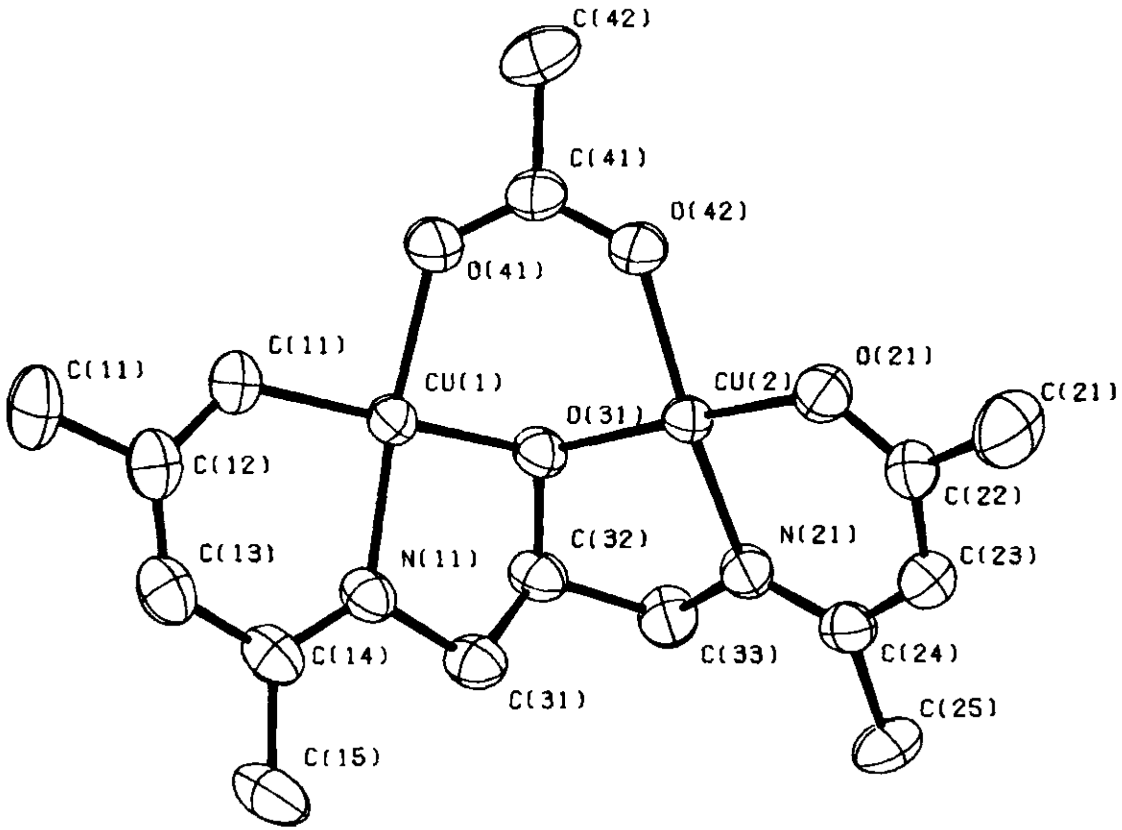


Figure 18. View of the Bent Dinuclear Complex Cu_2(Dapac)(OAc) with Numbering Scheme Shown.

The one copper(II) atom in the asymmetric unit was easily located form the Patterson synthesis. The remaining non-hydrogen atoms were located from successive difference Fourier calculations. All hydrogen atoms were found geometrically (C - H dist = .95) and their positional parameters were refined, setting their temperature factors constant at 5.0.

The asymmetric unit contains only half of a dinuclear moiety; the remaining part is generated by the symmetry transformation (two-fold axis): -x,y,1/2-z. The nearest neighbor molecule is generated by inversion.

Tables G and Q contain the structure factors and atomic parameters, respectively. Values of bond distances and angles for this complex, listed in Table 17 and 18, respectively, are compared to the values for the other complexes in this series.

The binuclear complexes (Figure 19) strongly interact with one another along the crystallographic c-axis to form one-dimensional chains (Figure 20). The dinuclear molecule is best described as containing two four-coordinate copper(II) atoms bridged by both the isopropoxide oxygen and the oxygens (three atom bridge) of an acetate group. The coordination sphere of each copper(II) is completed by the phenoxide oxygens and the imine nitrogens of the

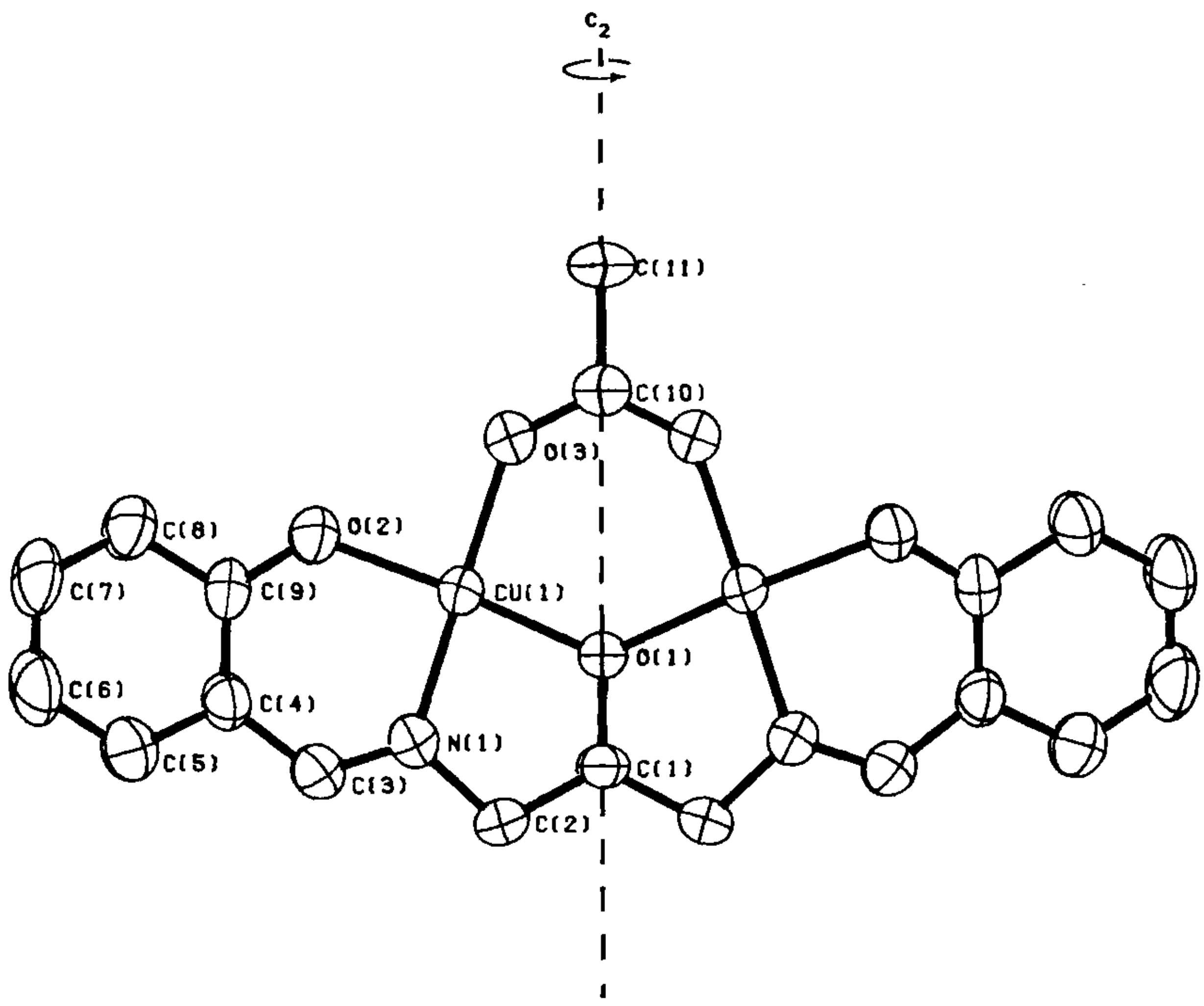


Figure 19. View of the Molecule $Cu_2(Dapsa)(OAc)\cdot 2CH_3CN$ Omitting the Two Acetonitrile Molecules of Solvation. The Dashed Line Indicates the Two-Fold Symmetry Axis Imposed by the Space Group C2/c.

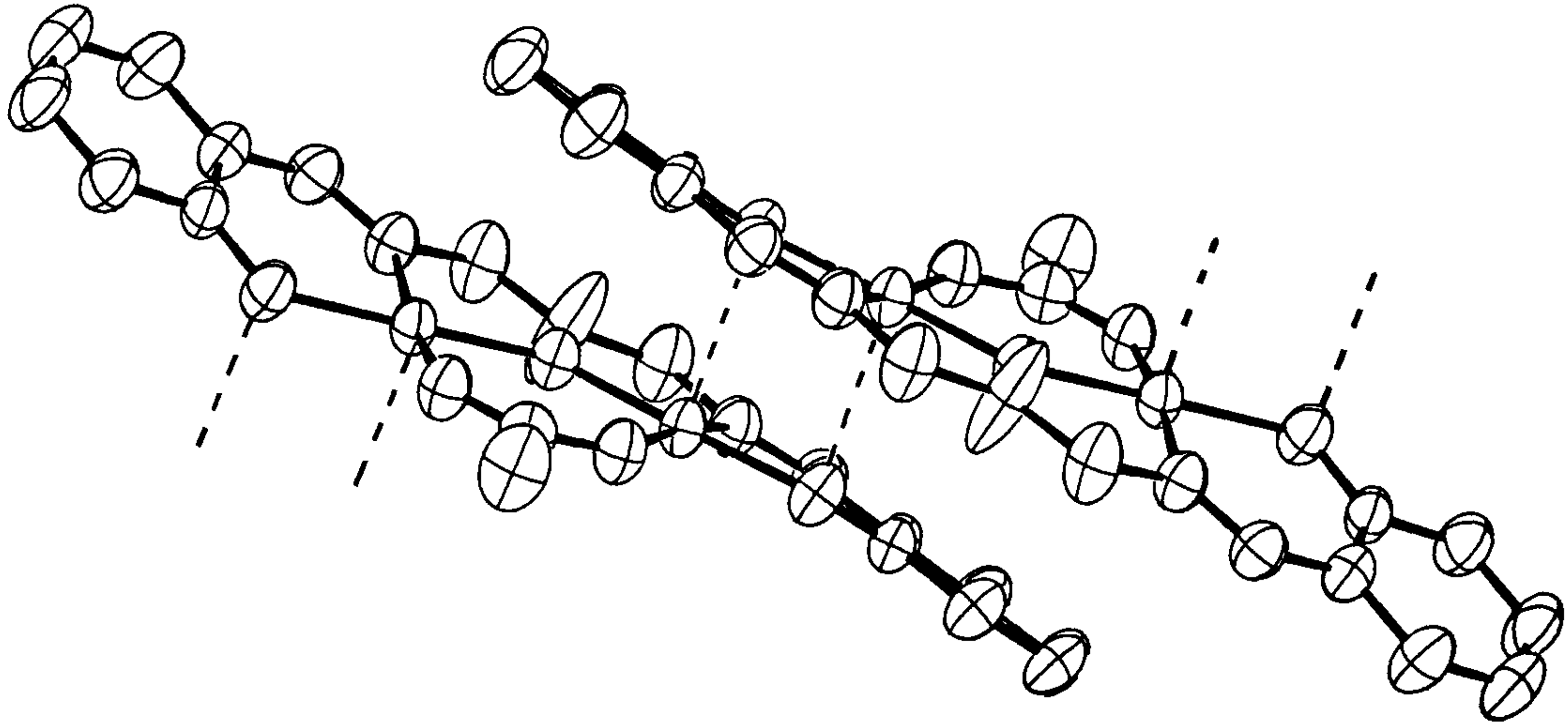


Figure 20. A View of the Intermolecular Infinite Chain Interactions in the Crystal Structure of Cu_2(Dapsa)(OAc)$\cdot 2CH_3CN$. Acetonitrile Molecules of Solvation Omitted for Clarity.

binucleating ligand Dapsa. Four membered rings are formed intermolecularly which propagate the infinite chain along the c-axis. These four membered rings consist of two copper(II) atoms bridged by the phenoxide oxygens of Dapsa. The intramolecular Cu(1) - Cu(1') distance (3.463 Å) is greater than the intermolecular Cu(1) - Cu(1'') distance (3.235 Å).

The least squres plane analyses (Table 14) for the copper(II) coordination sphere shows little deviation from square planar geometry. The least squares plane analysis for the entire molecule emphasizes just how planar the molecule really is. The largest deviation is found for the atom O(2) (0.623 Å).

The results of the magnetic study are listed in the second grouping of Table 19, along with the susceptibilities of the other compounds in this series. Since the complex decomposes to the non-solvated species in vacuum, the molar magnetic susceptibilities recorded were calculated using the non-solvated formulation of the complex.

Cu_2(Dapsa)(OAc)$\cdot CH_3OH$

The two copper (II) atoms in the asymmetric unit were easily located from a Patterson synthesis. The remaining atoms were found in successive difference fourier

Table 14. Least Squares Plane Analyses for the Complex $Cu_2(Dapsa)(OAc)\cdot 2CH_3CN$.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation or the plane involving O(1), O(2), O(3) and N(1):			
$0.8431x - 0.0788y + 0.5320z = 1.3778$			
O(1)	-0.082	N(1)	0.080
O(2)	-0.090	Cu(1)	-0.073
O(3)	0.073		
(b) Equation of the plane involving the set atoms in a dimer:[c]			
$0.7700x + 0.0104y + 0.6379z = 1.7539$			
Cu(1)	-0.318	Cu(1')	0.234
O(1)	-0.034	C(1)	-0.020
O(2)	-0.623	O(2')	0.525
O(3)	-0.256	O(3')	0.134
N(1)	-0.081	N(1')	0.035
C(2)	-0.040	C(2')	0.014
C(3)	0.084	C(3')	-0.123
C(4)	0.029	C(4')	-0.085
C(5)	0.342	C(5')	-0.386
C(6)	0.295	C(6')	-0.355
C(7)	-0.076	C(7')	-0.012
C(8)	-0.387	C(8')	0.287
C(9)	-0.326	C(9')	0.242
C(10)	-0.067	C(11)	-0.082

[a] Direction cosines of the plane refer to the orthogonal axis system a,b,c^*.

[b] All atoms weighted at unity.

[c] X related to X' by the symmetry transformation: -x,y,1/2-z.

calculations. All hydrogen atoms were located geometrically (C - H dist = 0.95) and their positional parameters refined, setting their temperature factors constant at 5.0.

Tables H and R list the structure factors and atomic parameters, respectively. The bond distances and angles are listed under the second column heading in Table 17 and 18, repectively.

The compound forms discrete, dinuclear units in the solid with the two four-coordinate copper(II) atoms being bridged by the isopropoxide oxygen and the oxygens (three atom bridge) of the acetate group. The coordination sphere of each copper(II) is completed by the phenoxide oxygens and imine nitrogens of the pentadentate ligand (Figure 22, Table 15). The crystal structure of the complex adopts a rather unusual, yet efficient method of packing. This is illustrated in the accompanying ORTEP (Figure 21). The planar complexes are held in this orientation with virtually no intermolecular interaction (closest approach Cu2-C4' = 3.167 Å, Cu-Cu' dist = 3.832 Å).

The magnetic susceptibilities at various temperature are listed in the third set of parameters listed in Table 19.

<u>Cu_2(Dapsa)(OAc)</u>

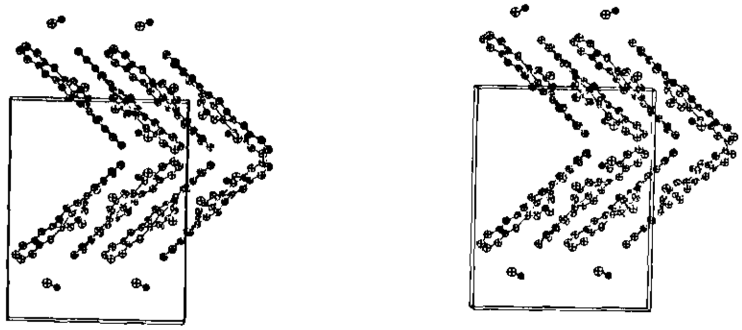


Figure 21. Stereoview of the Unit Cell and Packing Diagram for the Complex Cu_2(Dapsa)(OAc)$\cdot CH_3OH$.

Only two of the four copper(II) atoms in the asymmetric unit could be located from the rather complicated Patterson synthesis. In the following difference Fourier the remaining two copper(II) atoms were located along with the atoms in the coordination sphere of each metal. The remaining atoms were found from successive difference Fourier calculations.

Tables I and S in the appendix contain the structure factors and atomic parameters, respectively , for the complex. Selected bond distances and angles are listed in the third group of parameters in Tables 17 and 18 respectively. In these tables the equivalence of the analogous portions of the molecule is easily seen.

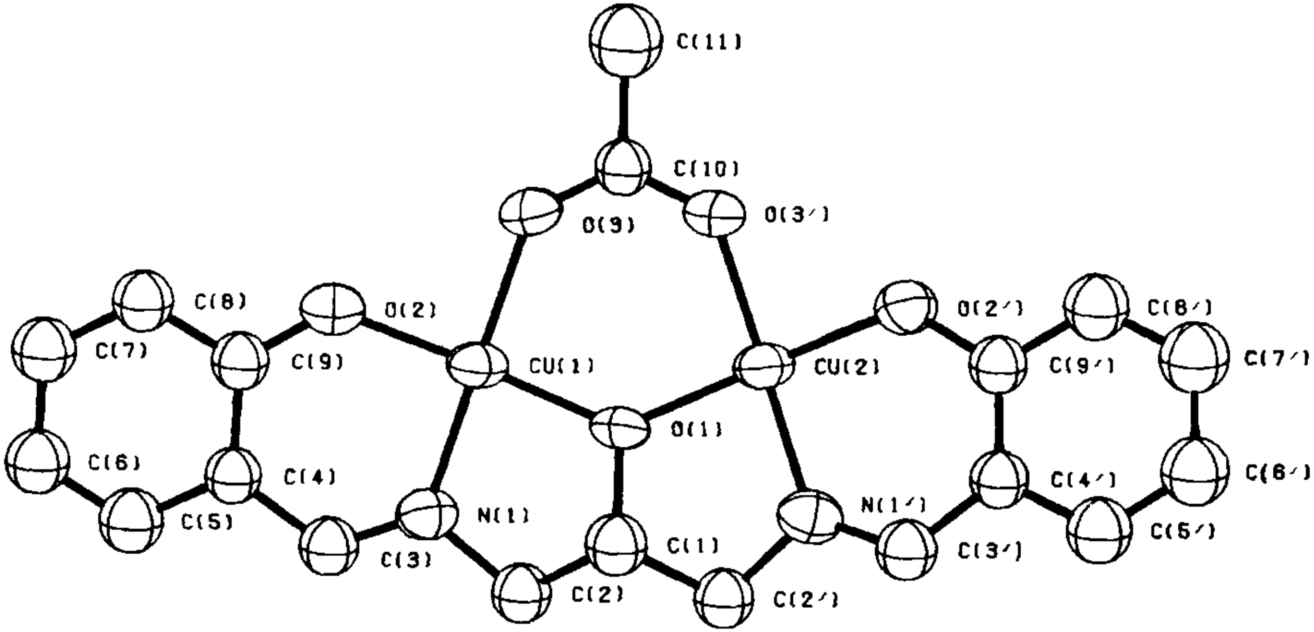


Figure 22. View of the Molecule Cu_2(Dapsa)(OAc)·CH_3OH Omitting the Methanol Molecule of Solvation.

Table 15. Least Squares Plane Analyses for the Complex $Cu_2(Dapsa)(OAc)\cdot CH_3OH$.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation of the plane involving O(1), O(2), O(3) and N(1):			
$-0.2102x - 0.7454y + 0.6327z = -1.7326$			
O(1)	-0.113	N(1)	0.139
O(2)	-0.112	Cu(1)	0.010
O(3)	0.119		
(b) Equation of the plane involving O(1), O(2'), O(3') and N(1'):			
$-0.3214x - 0.6431y + 0.6950z = -1.5946$			
O(1)	-0.015	N(1')	0.016
O(2')	-0.016	Cu(2)	0.061
O(3')	0.016		
(c) Equation of the plane involving the set of atoms in a dimer:			
$-0.2887x - 0.6505y + 0.7026z = -1.7908$			
Cu(1)	0.043	Cu(2)	0.286
O(1)	0.181	C(1)	-0.104
O(2)	-0.333	O(2')	0.236
O(3)	0.068	O(3')	0.302
N(1)	0.257	N(1')	0.179
C(2)	0.493	C(2')	0.374
C(3)	0.267	C(3')	-0.076
C(4)	0.082	C(4")	-0.153
C(5)	0.186	C(5')	-0.425
C(6)	0.049	C(6')	-0.507
C(7)	-0.292	C(7')	-0.163
C(8)	-0.417	C(8')	0.086
C(9)	-0.236	C(9')	0.070
C(10)	0.193	C(11)	0.262

[a] Direction cosines of the plane refer to the orthogonal system a,b,c^*.

[b] All atoms weighted at unity.

The two independent dinuclear molecules are similar in gross structure. Two four-coordinate copper(II) atoms are bridged by an isopropoxide oxygen of the Dapsa ligand and by the oxygens (three atom bridge) of the acetate group. The remaining coordination sites at each copper(II) are filled by the phenoxide oxygens and the imine nitrogens of the ligand. The two crystallographically independent molecules are illustrated in Figure 23 as they occur in the asymmetric unit.

The least squares plane analyses of the coordination spheres of the metal atoms shows only minor deviations from idealized square planar geometry (Table 16). The overall planarity of the molecule is evident from the results listed in the last two analyses of Table 16.

The magnetic susceptibilities at various temperatures are reported in the fourth set of values listed in Table 19.

Cu(DapsaH)$\cdot$$CH_3CN$

The one copper(II) atom in the asymmetric unit was located via a Patterson synthesis. All the coordinating atoms were found on the first difference Fourier calculation, with the remaining atoms being located on successive Fourier electron density maps.

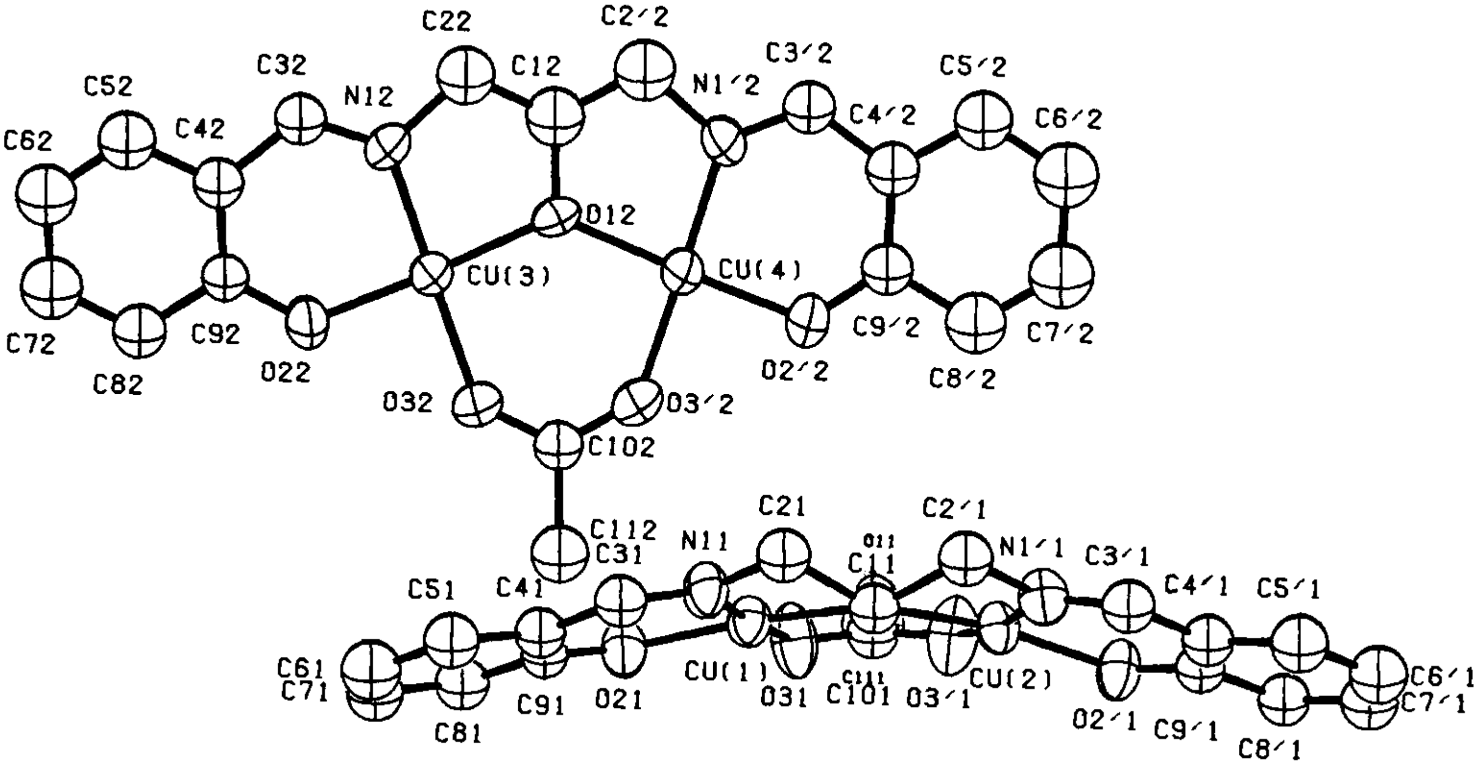


Figure 23. Asymmetric Unit and Numbering System for the Dinuclear Complex Cu_2(Dapsa)(OAc).

Table 16. Least Squares Plane Analyses for the Complex $Cu_2(Dapsa)(OAc)$.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation of the plane involving O11, O21, O31 and N11:			
$0.0646x - 0.6018y + 0.7961z = -1.0949$			
O11	-0.058	N11	0.060
O21	-0.104	Cu(1)	0.012
O31	0.134		
(b) Equation of the plane involving O11, O2'1, O3'1 and N1'1:			
$-0.1686x - 0.5949y + 0.7859z = -1.4974$			
O11	-0.163	N1'1	0.121
O2'1	-0.111	Cu(2)	0.017
O3'1	0.222		
(c) Equation of the plane involving O12, O22, O32 and N12:			
$-0.0414x + 0.9858y + 0.1629z = -1.2889$			
O12	-0.011	N12	0.027
O22	-0.144	Cu(3)	0.003
O32	0.167		
(d) Equation of the plane involving O12, O2'2, O3'2 and N1'2:			
$-0.0238x + 0.9663y + 0.2565z = -0.6911$			
O12	-0.021	N1'2	0.018
O2'2	-0.015	Cu(4)	0.027
O3'2	0.020		

[a] Direction cosines of the plane refer to the orthogonal axis system a,b,c*.

[b] All atoms weighted at unity.

Table 16. (Continued).

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)

(e) Equation of the plane involving the set of atoms in the #1 dimer:

$$-0.0274x - 0.7134y + 0.7000z = -2.3959$$

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
Cu(1)	0.483	Cu(2)	0.505
O11	0.457	C11	-0.100
O21	0.316	O2'1	0.240
O31	0.926	O3'1	1.058
N11	0.209	N1'1	0.256
C21	0.362	C2'1	0.389
C31	-0.148	C3'1	0.004
C41	-0.294	C4'1	-0.093
C51	-0.699	C5'1	-0.344
C61	-0.864	C6'1	-0.454
C71	-0.643	C7'1	-0.312
C81	-0.221	C8'1	-0.061
C91	-0.072	C9'1	0.048
C101	1.269	C111	1.931

(f) Equation of the plane involving the set of atoms in the #2 dimer:

$$-0.0327x + 0.9810y + 0.1914z = -1.0525$$

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
Cu(3)	-0.042	Cu(4)	0.066
O12	-0.048	C12	-0.251
O22	-0.195	O2'2	0.085
O32	0.064	O3'2	0.174
N12	0.040	N1'2	-0.058
C22	0.098	C2'2	-0.031
C32	0.089	C3'2	-0.098
C42	0.025	C4'2	-0.022
C52	0.177	C5'2	-0.038
C62	0.073	C6'2	0.032
C72	-0.146	C7'2	0.132
C82	-0.257	C8'2	0.185
C92	-0.136	C9'2	0.085
C102	0.194	C112	0.456

[a] Direction cosines of the plane refer to the orthogogonal axis system a,b,c^*.

[b] All atoms weighted at unity.

Table 17. Comparison of Selected Analogous Interatomic Bond Distances (Å) for Cu_2(Dapsa)(OAc)·$2CH_3CN$, Cu_2(Dapsa)(OAc)·CH_3OH and Cu_2(Dapsa)(OAc).

	Cu_2(Dapsa)(OAc)·$2CH_3CN$		Cu_2(Dapsa)(OAc)·CH_3OH			
	ATOMS	DIST.	ATOMS	DIST.	ATOMS	DIST.
1	Cu(1) - O(1)	1.902(2)	Cu(1) - O(1)	1.829(4)	Cu(2) - O(1)	1.904(4)
2	Cu(1) - O(2)	1.909(3)	Cu(1) - O(2)	1.885(5)	Cu(2) - O(2')	1.891(4)
3	Cu(1) - O(3)	1.931(4)	Cu(1) - O(3)	1.940(4)	Cu(2) - O(3')	1.925(4)
4	Cu(1) - N(1)	1.926(4)	Cu(1) - N(1)	1.923(5)	Cu(2) - N(1')	1.912(5)
5	O(2) - C(9)	1.318(6)	O(2) - C(9)	1.301(7)	O(2') - C(9')	1.317(7)
6	O(3) - C(10)	1.253(5)	O(3) - C(10)	1.227(7)	O(3') - C(10)	1.236(7)
7	N(1) - C(2)	1.464(7)	N(1) - C(2)	1.492(8)	N(1') - C(2')	1.459(8)
8	N(1) - C(3)	1.276(6)	N(1) - C(3)	1.253(7)	N(1') - C(3')	1.278(8)
9	C(1) - C(2)	1.417(8)	C(1) - C(2)	1.50(1)	C(1) - C(2')	1.48(1)
10	C(3) - C(4)	1.412(7)	C(3) - C(4)	1.427(8)	C(3') - C(4')	1.418(8)
11	C(4) - C(5)	1.407(7)	C(4) - C(5)	1.404(8)	C(4') - C(5')	1.416(9)
12	C(5) - C(6)	1.367(9)	C(5) - C(6)	1.336(9)	C(5') - C(6')	1.35(1)
13	C(6) - C(7)	1.375(9)	C(6) - C(7)	1.376(9)	C(6') - C(7')	1.40(1)
14	C(7) - C(8)	1.364(8)	C(7) - C(8)	1.359(9)	C(7') - C(8')	1.380(9)
15	C(8) - C(9)	1.417(7)	C(8) - C(9)	1.400(9)	C(8') - C(9')	1.382(9)
16	C(4) - C(9)	1.395(7)	C(4) - C(9)	1.419(9)	C(4') - C(9')	1.400(8)
17	O(1) - C(1)	1.338(9)	O(1) - C(1)	1.416(7)		
18	C(10) - C(11)	1.51(1)	C(10) - C(11)	1.52(1)		
19	Cu(1) - Cu(1')	3.463(2)	Cu(1) - Cu(2)	3.482(2)		

	Cu_2(Dapsa)(OAc)							
	ATOMS	DIST.	ATOMS	DIST.	ATOMS	DIST.	ATOMS	DIST.
1	Cu(1) - O(11)	1.903(6)	Cu(2) - O(11)	1.902(6)	Cu(3) - O(12)	1.902(6)	Cu(4) - O(12)	1.908(6)
2	Cu(1) - O(21)	1.883(6)	Cu(2) - O(2'1)	1.868(6)	Cu(3) - O(22)	1.868(5)	Cu(4) - O(2'2)	1.874(6)
3	Cu(1) - O(31)	1.916(6)	Cu(2) - O(3'1)	1.911(6)	Cu(3) - O(32)	1.920(6)	Cu(4) - O(3'2)	1.914(7)
4	Cu(1) - N(11)	1.901(7)	Cu(2) - N(1'1)	1.923(7)	Cu(3) - N(12)	1.910(7)	Cu(4) - N(1'2)	1.889(7)
5	O(21) - C(91)	1.32(1)	O(2'1) - C(9'1)	1.33(1)	O(22) - C(92)	1.32(1)	O(2'2) - C(9'2)	1.32(1)
6	O(31) - C(101)	1.23(1)	O(3'1) - C(101)	1.25(1)	O(32) - C(102)	1.25(1)	O(3'2) - C(102)	1.25(1)
7	N(11) - C(21)	1.47(1)	N(1'1) - C(2'1)	1.48(1)	N(12) - C(22)	1.47(1)	N(1'2) - C(2'2)	1.49(1)
8	N(11) - C(31)	1.29(1)	N(1'1) - C(3'1)	1.28(1)	N(12) - C(32)	1.28(1)	N(1'2) - C(3'2)	1.27(1)
9	C(11) - C(21)	1.54(1)	C(11) - C(2'1)	1.53(1)	C(12) - C(22)	1.46(1)	C(12) - C(2'2)	1.43(1)
10	C(31) - C(41)	1.43(1)	C(3'1) - C(4'1)	1.45(1)	C(32) - C(42)	1.45(1)	C(3'2) - C(4'2)	1.44(1)
11	C(41) - C(51)	1.43(1)	C(4'1) - C(5'1)	1.44(1)	C(42) - C(52)	1.45(1)	C(4'2) - C(5'2)	1.43(1)
12	C(51) - C(61)	1.36(1)	C(5'1) - C(6'1)	1.38(1)	C(52) - C(62)	1.37(1)	C(5'2) - C(6'2)	1.39(1)
13	C(61) - C(71)	1.41(1)	C(6'1) - C(7'1)	1.35(1)	C(62) - C(72)	1.38(1)	C(6'2) - C(7'2)	1.38(2)
14	C(71) - C(81)	1.41(1)	C(7'1) - C(8'1)	1.39(1)	C(72) - C(82)	1.40(1)	C(7'2) - C(8'2)	1.36(1)
15	C(81) - C(91)	1.38(1)	C(8'1) - C(9'1)	1.42(1)	C(82) - C(92)	1.42(1)	C(8'2) - C(9'2)	1.44(1)
16	C(41) - C(91)	1.39(1)	C(4'1) - C(9'1)	1.39(1)	C(42) - C(92)	1.38(1)	C(4'2) - C(9'2)	1.38(1)
17	O(11) - C(11)	1.52(1)			O(12) - C(12)	1.37(1)		
18	C(101) - C(111)	1.41(1)			C(102) - C(112)	1.49(1)		
19	Cu(1) - Cu(2)	3.470(2)			Cu(3) - Cu(4)	3.482(2)		

Table 18. Comparison of Selected Analogous Interatomic Bonding Angles (deg) for Cu_2(Dapsa)(OAc)·$2CH_3CN$, Cu_2(Dapsa)(OAc)·CH_3OH, and Cu_2(Dapsa)(OAc).

	Cu_2(Dapsa)(OAc)·$2CH_3CN$		Cu_2(Dapsa)(OAc)·CH_3OH			
	ATOMS	ANGLE	ATOMS	ANGLE	ATOMS	ANGLE
1	O1-Cu1-O3	96.0(2)	O1-Cu1-O3	94.2(2)	O1-Cu2-O3'	94.5(2)
2	O2-Cu1-O3	88.0(2)	O2-Cu1-O3	88.6(2)	O2'-Cu2-O3'	86.8(2)
3	O1-Cu1-O2	176.0(2)	O1-Cu1-O2	172.2(2)	O1-Cu2-O2'	175.1(2)
4	O1-Cu1-N1	83.5(2)	O1-Cu1-N1	85.4(2)	O1-Cu2-N1'	84.3(2)
5	O2-Cu1-N1	92.7(2)	O2-Cu1-N1	92.7(2)	O2'-Cu2-N1'	94.1(2)
6	O3-Cu1-N1	171.1(2)	O3-Cu1-N1	172.9(2)	O3'-Cu2-N1'	177.1(2)
7	Cu1-O1-C1	114.5(1)	Cu1-O1-C1	111.9(4)	Cu2-O1-C1	113.8(4)
8	Cu1-O2-C9	125.4(3)	Cu1-O2-C9	128.0(4)	Cu2-O2'-C9'	126.7(4)
9	Cu1-O3-C10	135.2(4)	Cu1-O3-C10	135.0(4)	Cu2-O3'-C10	134.6(5)
10	Cu1-N1-C2	113.3(3)	Cu1-N1-C2	111.4(4)	Cu2-N1'-C2'	113.0(4)
11	Cu1-N1-C3	126.2(4)	Cu1-N1-C3	127.1(4)	Cu2-N1'-C3'	125.6(4)
12	C2-N1-C3	120.4(5)	C2-N1-C3	121.5(5)	C2'-N1'-C3'	121.3(5)
13	O1-C1-C2	118.0(4)	O1-C1-C2	108.7(5)	O1-C1-C2'	110.5(5)
14	C1-C2-N1	109.7(6)	C1-C2-N1	107.4(5)	C1-C2'-N1'	107.6(5)
15	N1-C3-C4	125.3(5)	N1-C3-C4	125.3(6)	N1'-C3'-C4'	124.9(6)
16	C3-C4-C5	117.2(5)	C3-C4-C5	119.2(6)	C3'-C4'-C5'	117.2(6)
17	C5-C4-C9	119.5(5)	C5-C4-C9	118.0(6)	C5'-C4'-C9'	118.3(6)
18	C3-C4-C9	123.2(4)	C3-C4-C9	122.8(6)	C3'-C4'-C9'	124.5(6)
19	C4-C5-C6	121.6(6)	C4-C5-C6	122.9(6)	C4'-C5'-C6'	122.6(7)
20	C5-C6-C7	118.7(6)	C5-C6-C7	119.2(6)	C5'-C6'-C7'	118.8(7)
21	C6-C7-C8	118.7(6)	C6-C7-C8	120.6(6)	C6'-C7'-C8'	119.7(7)
22	C7-C8-C9	120.7(6)	C7-C8-C9	121.9(6)	C7'-C8'-C9'	122.2(7)
23	C4-C9-C8	117.7(5)	C4-C9-C8	117.3(6)	C4'-C9'-C8'	118.4(6)
24	O2-C9-C4	124.7(4)	O2-C9-C4	123.4(5)	O2'-C9'-C4'	123.2(6)
25	O2-C9-C8	117.6(5)	O2-C9-C8	119.3(6)	O2'-C9'-C8'	118.5(7)
26	O3-C10-C11	116.7(3)	O3-C10-C11	116.5(6)	O3'-C10-C11	114.9(6)
27	Cu1-O1-Cu1'	131.1(2)	Cu1-O1-Cu2	133.0(2)		
28	C2-C1-C2'	113.6	C2-C1-C2'	113.3(5)		
29	O3-C10-O3'	126.6(7)	O3-C10-O3'	128.5(6)		

Table 18. (Continued).

Cu2 (Dapsa) (OAc)

	ATOMS	ANGLE	ATOMS	ANGLE	ATOMS	ANGLE	ATOMS	ANGLE
1	O11-Cu1-O31	94.5(3)	O11-Cu2-O3'1	94.2(3)	O12-Cu3-O32	95.1(3)	O12-Cu4-O3'2	94.3(2)
2	O21-Cu1-O31	88.4(3)	O2'1-Cu2-O3'1	88.9(3)	O22-Cu3-O32	87.4(3)	O2'2-Cu4-O3'2	87.3(3)
3	O11-Cu1-O21	173.8(3)	O11-Cu2-O2'1	170.4(3)	O12-Cu3-O22	174.6(3)	O12-Cu4-O2'2	176.9(3)
4	O11-Cu1-N11	84.7(3)	O11-Cu2-N1'1	84.6(3)	O12-Cu3-N12	84.1(3)	O12-Cu4-N1'2	84.3(3)
5	O21-Cu1-N11	93.0(3)	O2'1-Cu2-N1'1	93.9(3)	O22-Cu3-N12	93.8(3)	O2'2-Cu4-N1'2	94.1(3)
6	O31-Cu1-N11	174.8(3)	O3'1-Cu2-N1'1	170.5(3)	O32-Cu3-N12	174.4(3)	O3'2-Cu4-N1'2	178.5(3)
7	Cu1-O11-C11	112.7(5)	Cu2-O11-C11	112.4(5)	Cu3-O12-C12	113.9(5)	Cu4-O12-C12	113.9(5)
8	Cu1-O21-C91	127.3(6)	Cu2-O2'1-C9'1	126.9(5)	Cu3-O22-C92	127.5(5)	Cu4-O2'2-C9'2	125.3(6)
9	Cu1-O31-C101	134.6(6)	Cu2-O3'1-C101	135.3(6)	Cu3-O32-C102	135.8(6)	Cu4-O3'2-C102	137.6(6)
10	Cu1-N11-C21	112.9(5)	Cu2-N1'1-C2'1	112.5(6)	Cu3-N12-C22	114.1(6)	Cu4-N1'2-C2'2	114.4(6)
11	Cu1-N11-C31	128.0(6)	Cu2-N1'1-C3'1	127.8(6)	Cu3-N12-C32	127.3(6)	Cu4-N1'2-C3'2	128.8(6)
12	C21-N11-C31	119.1(8)	C2'1-N1'1-C3'1	119.6(7)	C22-N12-C32	118.5(8)	C2'2-N1'2-C3'2	116.7(7)
13	O11-C11-C21	107.4(1)	O11-C11-C2'1	108.3(7)	O12-C12-C22	114.8(9)	O12-C12-C2'2	116.7(9)
14	C11-C21-N11	105.2(7)	C11-C2'1-N1'1	104.8(7)	C12-C22-N12	108.2(8)	C12-C'2'-N1'2	107.9(9)
15	N11-C31-C41	122.9(9)	N1'1-C3'1-C4'1	122.2(8)	N12-C32-C42	122.7(8)	N1'2-C3'2-C4'2	122.4(8)
16	C31-C41-C51	115.4(8)	C3'1-C4'1-C5'1	115.0(8)	C32-C42-C52	114.5(8)	C3'2-C4'2-C5'2	115.6(9)
17	C51-C41-C91	120.2(8)	C5'1-C4'1-C9'1	120.1(8)	C52-C42-C92	120.9(5)	C5'2-C4'2-C9'2	120.9(9)
18	C31-C41-C91	124.4(8)	C3'1-C4'1-C9'1	124.9(8)	C32-C42-C92	124.6(8)	C3'2-C4'2-C9'2	123.5(8)
19	C41-C51-C61	120.1(9)	C4'1-C5'1-C6'1	119.9(1)	C42-C52-C62	117.9(9)	C4'2-C5'2-C6'2	118.7(9)
20	C51-C61-C71	120(1)	C5'1-C6'1-C7'1	120(1)	C52-C62-C72	122(1)	C5'2-C6'2-C7'2	121(1)
21	C61-C71-C81	120.2(9)	C6'1-C7'1-C8'1	124(1)	C62-C72-C82	121(1)	C6'2-C7'2-C8'2	122(1)
22	C71-C81-C91	119.9(9)	C7'1-C8'1-C9'1	117.4(8)	C72-C82-C92	118.7(8)	C7'2-C8'2-C9'2	120(1)
23	C41-C91-C81	119.7(8)	C4'1-C9'1-C8'1	119.5(8)	C42-C92-C82	119.5(8)	C4'2-C9'2-C8'2	118.3(9)
24	O21-C91-C41	123.8(8)	O2'1-C9'1-C4'1	124.1(8)	O22-C92-C42	123.8(7)	O2'2-C9'2-C4'2	125.7(8)
25	O21-C91-C81	116.5(8)	O2'1-C9'1-C8'1	116.4(8)	O22-C92-C82	116.8(8)	O2'2-C9'2-C8'2	115.9(8)
26	O31-C101-C111	117.4(9)	O3'1-C101-C111	116.2(9)	O32-C102-C112	117.3(8)	O3'2-C102-C112	117.8(8)
27	Cu1-O11-Cu2	131.6(3)			Cu3-O12-Cu4	132.1(3)		
28	C21-C11-C2'1	111.8(7)			C22-C12-C2'2	118.8(9)		
29	O31-C101-O3'1	126.2(9)			O32-C102-O3'2	124.9(8)		

Table 19. Diamagnetic Corrections (χ_{dia}), Molar Magnetic Susceptibilities (χ_M^{corr}) and Effective Magnetic Moments (μ_{eff}) for the Complexes Cu_2(Dapac)(OAc), Cu_2(Dapsa)(OAc)·$2CH_3CN$, Cu_2(Dapsa)(OAc)·CH_3OH and Cu_2(Dapsa)(OAc).

T (°K)	χ_M^{corr} x 10^6cgs	μ_{eff} (BM)	χ_M^{corr} x 10^6cgs	μ_{eff} (BM)
	Cu_2(Dapac)(OAc)		Cu_2(Dapsa)(OAc)·[$2CH_3CN$]	
	χ_{dia}= -0.000093		χ_{dia}= -0.000104	
298	1519	1.90	1310	1.76
278	1632	1.91	1346	1.73
258	1769	1.91	1438	1.72
238	1922	1.91	1512	1.70
218	2101	1.92	1608	1.68
198	2325	1.92	1715	1.65
178	2601	1.93	1842	1.62
158	2948	1.93	1923	1.56
138	3440	1.95	2065	1.51
118	4075	1.96	2181	1.44
98	4922	1.97	2297	1.34
	Cu_2(Dapsa)(OAc)·CH_3OH		Cu_2(Dapsa)(OAc)	
	χ_{dia}= -0.000115		χ_{dia}= -0.000104	
298	1226	1.71	1201	1.68
278	1273	1.68	1237	1.66
258	1343	1.67	1301	1.64
238	1395	1.63	1355	1.61
218	1461	1.60	1423	1.58
198	1511	1.55	1483	1.53
178	1540	1.48	1536	1.48
158	1547	1.40	1568	1.41
138	1486	1.28	1575	1.32
118	1352	1.13	1517	1.20
98	1101	0.93	1391	1.05

Tables J and T contain the structure factors and atomic parameters, respectively, for this complex. Selected bond distances and angles for this complex are listed in Table 20.

The compound crystallizes with four discrete, monomeric units in the unit cell. The four coordinate copper(II) atom is chelated, in a cisoid fashion, by two imine nitrogens and two phenoxide oxygens of the Dapsa ligand. The remaining protonated isopropyl oxygen is uncoordinated, but is weakly hydrogen-bonded (2.70 Å O-O dist.) to the phenoxide oxygen of an adjacent molecule. The structure and labeling system are presented in Figure 24.

Several interesting structural aspects arise in this complex due to the strain imposed by the saturated diaminopropane moiety of the ligand. The six memberd ring formed as a result of the coordination of the two imine nitrogens to the copper(II), assumes a severely twisted conformation. four of the atoms contained in this ring (Cu1 N11 N21 and C1) all lie in a plane whereas C11 is well below (o.674 Å) and C21 is well above (-0.745 Å) the plane (Figure 25). The idealized square planar geometry about the central metal atom is distorted toward tetrahedral geometry (Table 21).

The magnetic susceptibility of this monomer was not experimentally determined. It was assumed to be a magnetically dilute, one unpaired electron system with a moment, independent of temperature, in the range of 1.73 - 1.90 BM.

Table 20. Selected Interatomic Distances (Å) and Angles (deg) for Cu(DapsaH)·CH_3CN.

ATOMS	DISTANCES n= 1	2
Cu-O(n1)	1.913(9)	1.92(1)
Cu-N(n1)	1.92(1)	1.95(1)
O(n1)-C(n8)	1.29(1)	1.32(2)
N(n1)-C(n1)	1.49(2)	1.50(2)
N(n1)-C(n2)	1.28(2)	1.31(2)
C(1)-C(n1)	1.56(2)	1.49(2)
C(n2)-C(n3)	1.46(2)	1.43(2)
C(n3)-C(n4)	1.46(2)	1.48(2)
C(n4)-C(n5)	1.40(2)	1.34(2)
C(n5)-C(n6)	1.40(2)	1.47(2)
C(n6)-C(n7)	1.39(2)	1.40(2)
C(n7)-C(n8)	1.43(2)	1.42(2)
C(n3)-C(n8)	1.40(2)	1.37(2)
C(n)-O(n)	1.46(2)	
NSOLV-C1SLV	1.12(2)	
C1SLV-C2SLV	1.50(3)	

ATOMS	ANGLES n= 1	2
Cu-O(n1)-C(n8)	127.5(9)	126.4(9)
Cu-N(n1)-C(n1)	116(1)	114(1)
Cu-N(n1)-C(n2)	129(1)	125(1)
C(n1)-N(n1)-C(n2)	115(1)	121(1)
O(1)-C(1)-C(n1)	103(1)	116(1)
O(n1)-C(n8)-C(n3)	124(1)	123(1)
O(n1)-C(n8)-C(n7)	116(1)	116(2)
N(n1)-C(n2)-C(n3)	122(2)	123(2)
C(1)-C(n1)-N(n1)	113(1)	114(1)
C(n2)-C(n3)-C(n4)	115(2)	113(1)
C(n2)-C(n3)-C(n8)	124(2)	128(2)
C(n4)-C(n3)-C(n8)	120(2)	119(2)
C(n3)-C(n4)-C(n5)	119(2)	119(2)
C(n4)-C(n5)-C(n6)	120(2)	122(2)
C(n5)-C(n6)-C(n7)	123(2)	118(2)
C(n6)-C(n7)-C(n8)	118(2)	120(2)
C(n7)-C(n8)-C(n3)	120(1)	121(2)

Table 20. (Continued).

ATOMS	ANGLE	ATOMS	ANGLE
O(11)-Cu-N(11)	91.9(5)	O(22)-Cu-N(22)	94.2(5)
O(11)-Cu-O(21)	91.8(4)	N(11)-Cu-N(21)	93.0(6)
N(11)-Cu-O(21)	156.0(5)	O(11)-Cu-N(21)	153.6(6)
NSOLV-C1SLV-C2SLV	169.9		

Table 21. Least Squares Plane Analysis for the Monomeric Complex Cu(DapsaH)·CH_3CN.[a,b]

ATOM	DEVIATION (Å)	ATOM	DEVIATION (Å)
(a) Equation of the plane involving O11, O21, N11 and N21:			
$0.3311x + 0.9405y + 0.0757z = 2.0759$			
O11	-0.434	N21	-0.588
O21	0.286	Cu	-0.071
N11	0.373		
(b) Equation of the plane involving the four atoms Cu, N21, N11 and C1 (six-membered ring):			
$0.6321x + 0.7675y + 0.1068z = 1.5560$			
Cu	0.056	C1	0.039
N11	-0.047	N21	-0.054
C11	0.674	C21	-0.745

[a] Direction cosines of the plane refer to the orthogonal axis system a,b,c^*.

[b] All atoms weighted at unity.

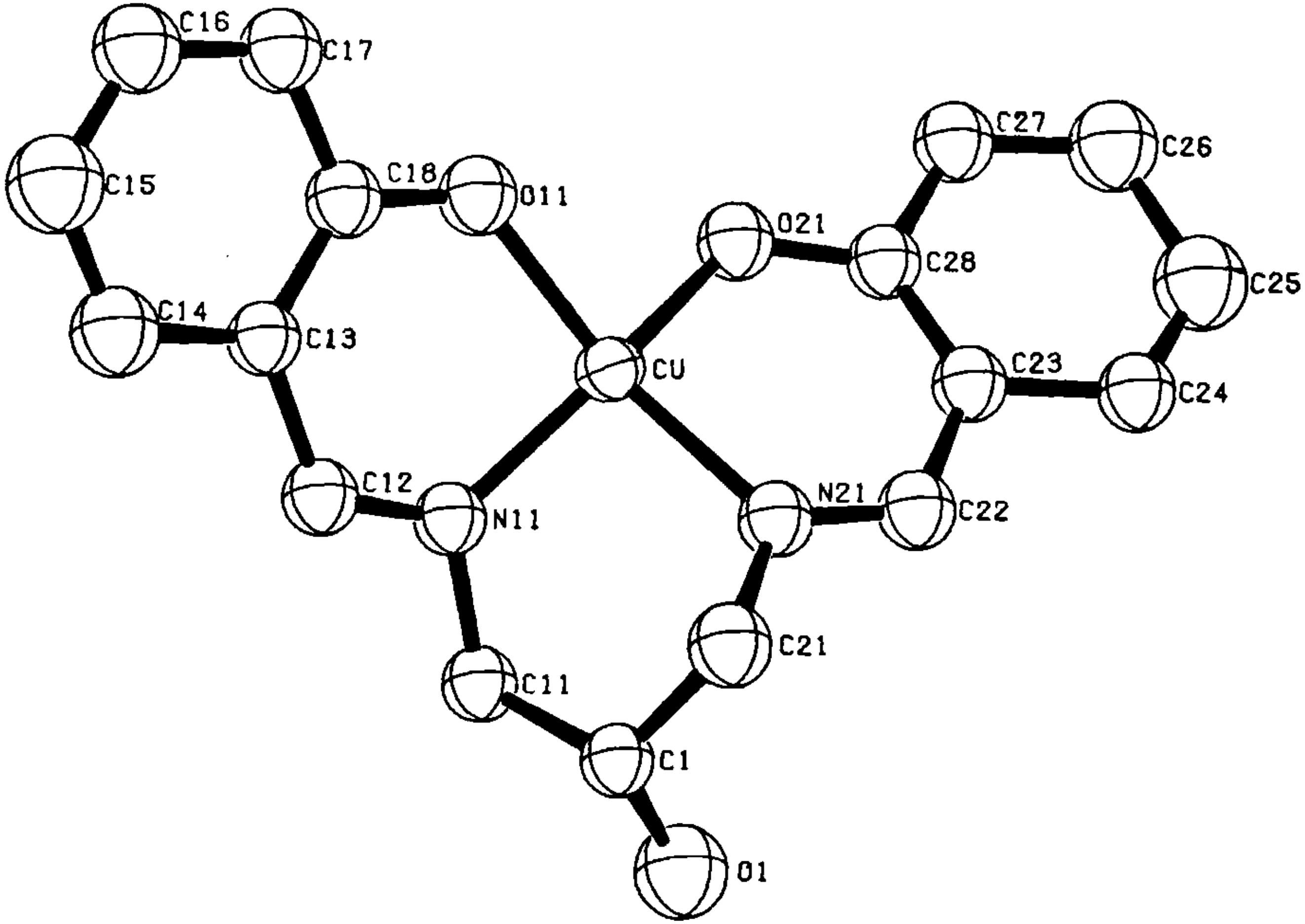


Figure 24. View of the Monomeric Complex Cu(DapsaH)·CH_3CN with Numbering Scheme. The Acetonitrile Molecule of Solvation has been Omitted for Clarity.

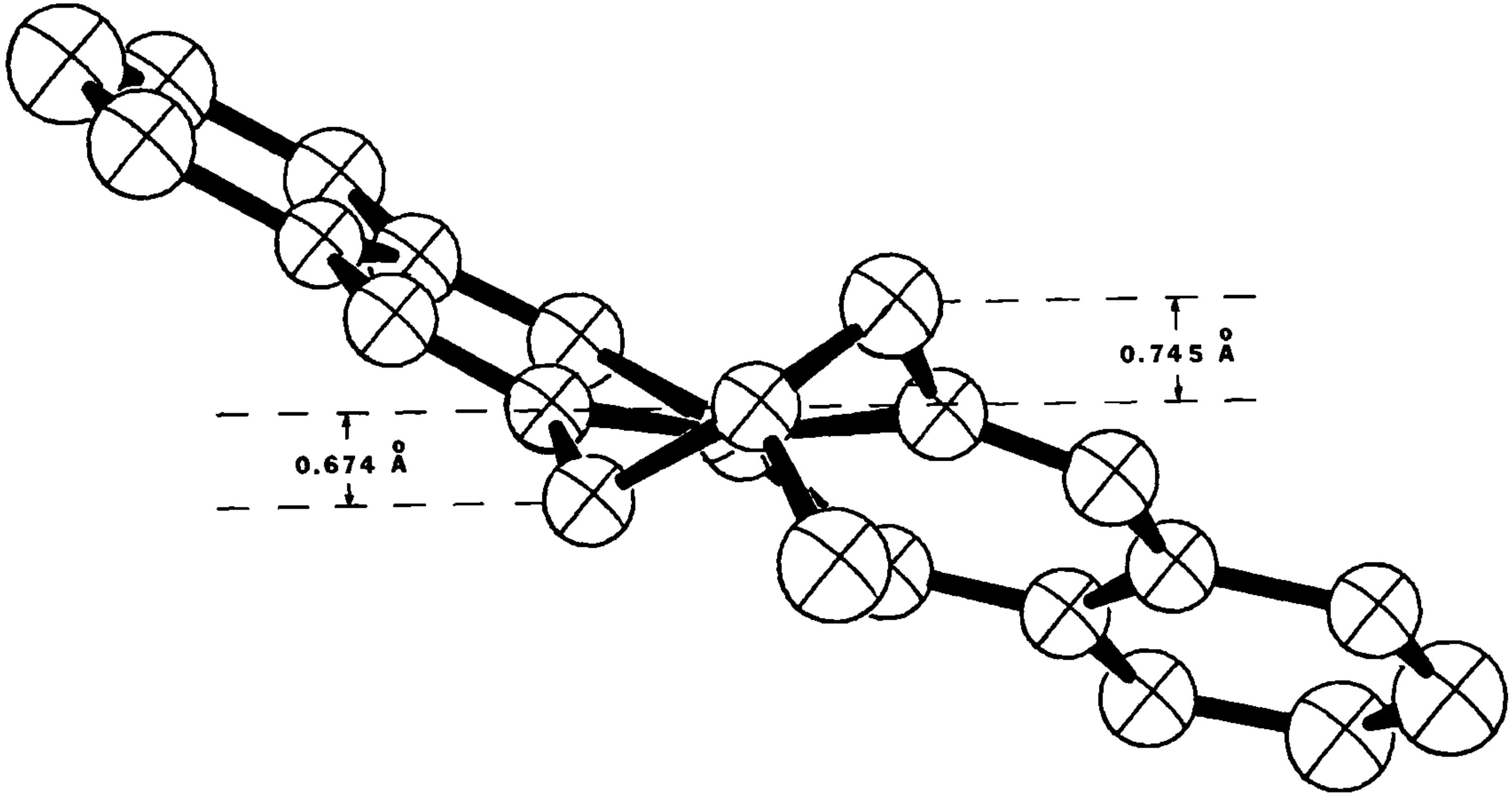


Figure 25. View of Cu(DapsaH)·CH_3CN Showing Conformation of the Distorted Six-Membered Ring. Distances Specified are the Deviations of C(11) and C(21) from the Plane Defined by Cu, N(11), N(21) and C(1).

CHAPTER III

DISCUSSION OF RESULTS

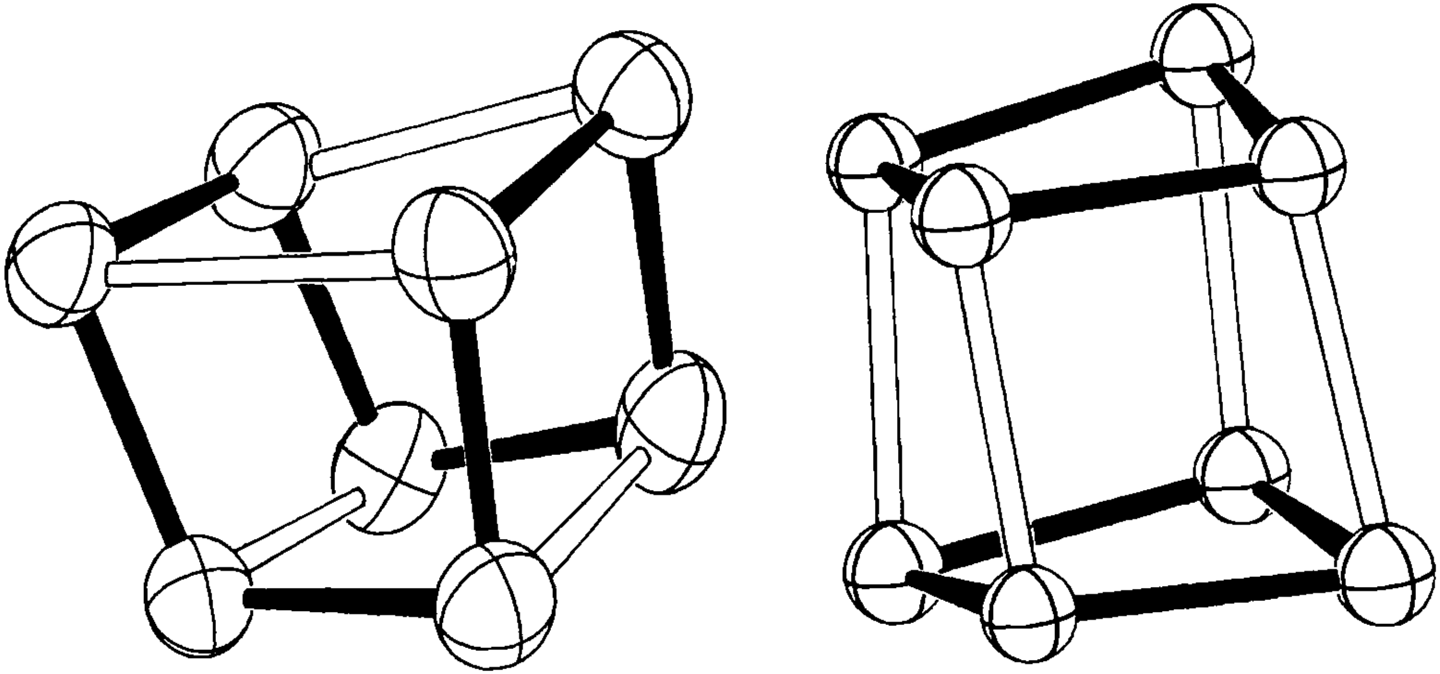
This chapter will highlight only the structural and magnetic results of comparative interest. Selected bond distances and angles of the complexes studied are summarized in Chapter II along with the detailed description of each molecular and crystal structure.

The advent of automated, variable scan rate X-ray diffractometers made possible the structural determination of several complexes which were unstable to air. This can be attributed to both the speed with which a full data set can now be collected and also the elimination of the need to perform preliminary camera work (i.e. no need for crystal to be aligned along an axis).

Results

Cubane-like Complexes

Cubane-like structures have been found for both the alpha- and beta-forms of Cu(EIA) (Figure 26). The



(A) (B)

Figure 26. Comparative Views of the Cubane Units. (A) The Tub Conformation Which β-$[Cu(EIA)]_4$ Adopts and (B) the Associated Dimer Form Which α-$[Cu(EIA)]_4$ Assumes.

alpha- and beta-forms differ in the coordination to copper, the relative orientaion of ligands, and in the relative positions of short and long Cu-O "cube" edges. The alpha-form, structurally characterized in 1970 (9), can be thought of as two associated dimers with each copper assuming a trigonal bipyramidal geometry (Figure 26B). The beta-form (presented herein) is best described as a folded 8-membered ring in a tub-like conformation (similar to cyclooctatetraene); each copper is square pyramidal (Figure 26A).

Shortly after the solvated beta-form had been structurally characterized in our laboratory (2-butanol solvate), Haase and coworkers (34) reported a dibenzene solvate with the same tub-like geometry. Helm had also prepared a homologous monotoluene adduct at this time and was in the process of magnetically characterizing this complex and a series of related compounds (35).

Though the scope of the work in our laboratory did not extend beyond the crystal structure determination, the follow-up of the magnetic studies and their interpretations are worth mentioning. Magnetic results from three independent laboratories (36, 37, 38) concluded that $[Cu(EIA)]_4$ (alpha-form) is best described magnetically by two exchange coupling constants, J_L (interaction through

Cu-Cu long bonds) and J_S (short bond interactions) with an average values of 4 and -16 cm^{-1}, respectively. This ferromagnetic and antiferromagnetic coupling, respectively, is not unusual and agrees well with the in-plane vs. out-of-plane interpretation presented by Lintvedt et.al. (39).

Interpretation of the magnetic results of the tub-like core appear to be more questionable. Haase et.al. (37) could not fit the beta-form to a susceptibility equation. However, Theriot and coworkers found overall ferromagnetic exchange constants of 15 and 10 cm to best describe the system. They attribute this overall ferromagnetic behavior to the fact that the two opposing Cu-O-Cu angles (sharing the same face of the cube) are 90 degrees (favoring ferromagnetic coupling) and 105 degrees (favoring antiferromagnetic coupling) (38). They continue their discussion by stating that the parallel pathway dominates the antiparallel exchange pathway. Since the four 90 degree Cu-O-Cu bridging angles all include longer Cu-O bonds (2.307-2.430 Å) it is difficult to envision how this effect alone could dominate the overall susceptibilty of the tetramer since the antiferromagnetic bridging angles (8) include shorter Cu-O bonds (1.976-1.946 Å); the distorted cubane species is too complex to invoke such simple bridging angle theory as the major cause of ferromagnetism. It would appear that the relative orientations of the coordination planes about each copper play a more important role in determining the magnetic properties of this system than the Cu-O-Cu angles.

The methanol solvate of the 1:1 complex of nickel and EIA was observed first in 1966 (7) but structural charaterization was hampered by severe crystal decomposition problems. Up to 1976 two reasonable structural possibilities were proposed: a methanol molecule could add perpendicular to the coordination plane and yield a dimer with square pyramidal geometry about each nickel or two dimers could associate to form discrete tetramers (8).

This investigation found the complex $[Ni(EIA)(CH_3OH)]_4$ to crystallize (orthorhombic space group $P2_1P2_1P2_1$, Z=16) into discrete, tetrameric cubane units with the neutral methanol molecule completing the octahedral coordination about each nickel (40). On the basis of the ease of desolvating this complex to the dimer , Ni(EIA), a tetrameric structure built-up of two bent dimeric moieties was expected. However, the cube core adopts a tub conformation, similar to the beta-form of Cu(EIA) but with much less distortion (long Ni-O bond dist = 2.112-2.130, short Ni-O bond dist = 2.020-2.055).

The green compound rapidly decomposes to the brown dimer, preventing variable temperature magnetic studies from being carried out on the system. Jager recorded a room temperature moment in the range of 3.2 - 3.3 BM.

N-N Bridged Complexes

Repeated attempts to prepare crystalline derivatives of a number of transition metal-DSALZ complexes failed due to the insolubilty of the resulting complexes in organic solvents. The iron(III) adduct, however, was an exception and yielded beautiful dark brown crystals upon recrystallization from acetone. This was the only compound in this series which was analyzed via single crystal X-ray diffraction methods.

The structural characterization of the complex $Fe_2(DSALZ)_3$ (reported herein) marks the first definitive study of a complex with this charged diiminoalcohol as a ligand. The complex maintains a dinuclear structure with a 2:3 (Fe(III):DSALZ) ratio. Each of the three ligands (binucleating) chelates to both octahedral metal centers, contributing a nitrogen and an oxygen atom to each iron atom to form the facial isomer. The slightly distorted octahedral coordination spheres about each iron(III) atom do not share a common face but rather are separated by the distance of the N-N azine bond. All structural parameters of the ligand resulted in the values expected from the earlier structural determination (41) of the uncoordinated neutral molecule DSALZH (the uncoordinated molecule is the <u>trans</u> rotamer with respect to the N-N bond).

An interesting structural aspect of $Fe_2(DSALZ)_3$ is the geometry about the six bridging nitrogens. They form a trigonal prism, twisted away from the eclipsed position (i.e. toward octahedral symmetry) by 24 degrees. The cobalt analog with the neutral Schiff base PMK (Figure 4; structure III), which was structurally characterized by Boyd and his group (15), also adopts a similarly distorted trigonal prismatic conformation (Figure 27; twist=17 degrees.) They convincingly reason that the twist can be attributed to the steric interactions between two bulky methyl groups. Salicylaldehyde azine (DSALZ), on the other hand, has only hydrogens in these positions. Therefore, the twist deformation probably arises from spatial requirements of the six-membered ring formed upon complextion of the ligand to the metal atom.

The magnetic moment of the dinuclear compound showed only a slight decrease (5.5 - 5.1 BM) with temperature (298 - 98 °K). This is a normal range of values for a high spin, d^5 system. If data at lower temperatures could have been obtained, it could have given more conclusive evidence

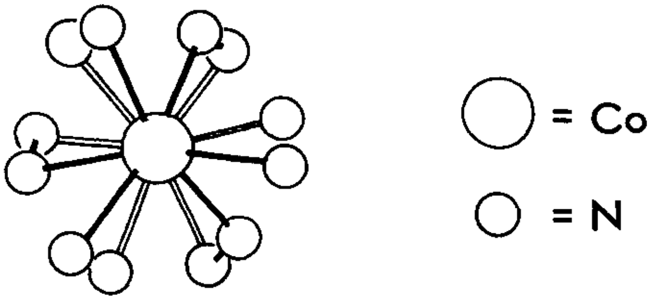


Figure 27. View Down the Co(1)-Co(2) Axis of the Coordination Sphere of $Co_2(PMK)_3^{4+}$ Illustrating the Twist from Trigonal Prismatic Geometry at the N-N Azine Bonds. Unfilled Bonds Represent Co(2)-N Interactions.

about magnetic coupling within the system; the data recorded here are too far from the Néel temperature to be useful in fitting a susceptibility equation.

Dapo Complexes

The variety of hydrogen-bonded species formed by the metal complexes of 2-aminoethanol and diethanolamine prompted us to structurally investigate compounds containing the aminoalcohol 1,3-diamino-2-propanol to determine if this ligand formed analogous adducts.

The complex chosen for initial studies was an ionic Co(III) complex. Two groups (22, 23) recently formulated the cation as trans-$[Co(Dapo)DapoH)]^{2+}$ based on spectral results. This was an obvious complex of choice to study hydrogen bonding since it contained both a protonated (DapoH) and deprotonated (Dapo) ligand.

The structure of the dark red crystalline needle was determined and the results confirmed that it was the trans complex, but it was revealed that it formed corner-to-corner, intermolecular hydrogen bonds (Figure 28).

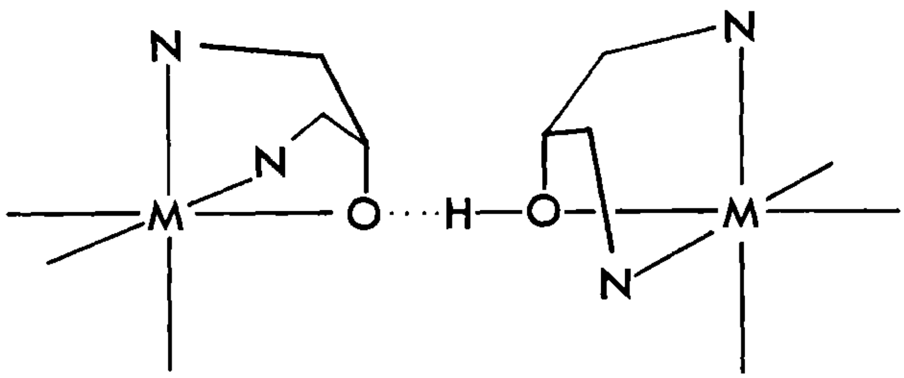


Figure 28. Corner-to-corner Hydrogen Bonding.

However, the molecules form an infinite linear chain and do not crystallize as discrete polynuclear units (Figure 29). Octahedral geometry is maintained about the cobalt center with only a very minor trigonal distortion due to the restriction of the tridentate ligand (Table 8).

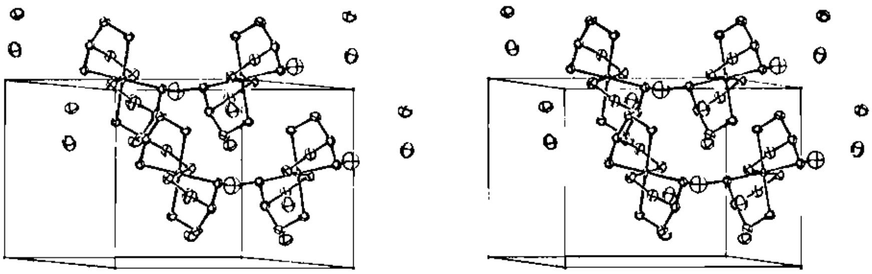


Figure 29. Stereoview of the Unit Cell and Crystal Packing of the Complex [Co(Dapo)(DapoH)]$C\ell_2 \cdot 2H_2O$.

For an ordered structure, the hydrogen (HBND) involved in hydrogen bonding should lie directly on the two-fold axis, midway between the two oxygens. Although located at this position in a difference Fourier, upon refining the coordinates of the atom HBND, it driftly significantly away from this position, indicating a disorder in the crystal structure. To conserve the charge balance, the postion of HBND was refined with an occupancy factor of 0.50. This resulted in an O(1)-HBND length of 1.01 Å, an O(1')-HBND bond length of 1.46 Å and an HBND - HBND' dist of 0.60 Å. The observed O(1)-HBND-O(1') angle is 156 degrees.

The disorder could result from a double-minimum well with the hydrogens randomly occupying either of the minimum-energy positions between pairs of cobalt complexes. Alternatively, there could be a single, unsymmetric well with the hydrogen within one chain ordered so that each cobalt complex forms one short and one long O-H distance; the disorder in this case would result from random ordering of chain direction within the crystal.

Once the infinite chain structure of the diamagnetic Co(III) complex was determined, it was decided to prepare complexes which would be magnetically interesting and also offer different modes of intermolecular hydrogen bonding. Thus, the relatively simple d^9-systems of copper(II) were investigated.

Initial results indicated immediate complex formation. Varying the preparative conditions, a blue, unstable crystalline material was obtained as the iodide salt. The only other results reported on this type of system was a deep blue nitrate salt which analyzed to be a 1:1:1 (Cu:Dapo:NO_3^-) complex (24). Based on the subnormal magnetic moment which it exhibited, a binuclear structure was suggested. The analysis of our iodide salt did not agree with a simple dimeric formulation. It appeared to be solvate with a whole number ratio of 3:4:4 (Cu:Dapo:I).

Preliminary results of single crystal X-ray studies concurred with a trinuclear formulation (42) and the molecular structure was determined (Figure 30). While hydrogen bonding was initially suspected, the protonated alcohol groups do not interact with any other atoms in the unit cell (intermolecular closest approach dist 4.0 Å).

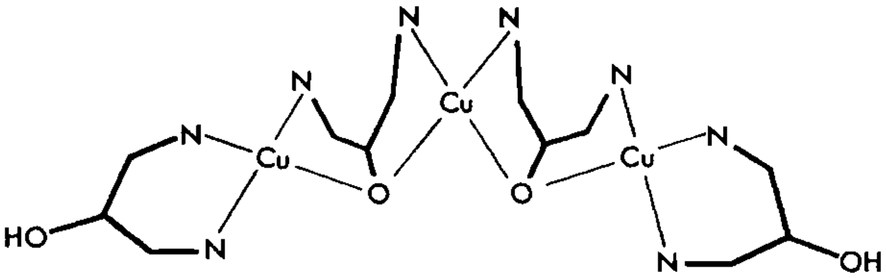


Figure 30. Schematic Diagram of the Structure of the Cation $[Cu_3(Dapo)_2(DapoH)_2]^{4+}$.

Concurrent with the solution of this trinuclear structure was the publication by Näsäkkälä (25) of a complete structural study of the 1:1:1 ($Cu:Dapo:NO_3^-$) complex previously suggested to be a dimer. He unequivocally proved that it was a cyclic trimer (Figure 9) and obtained a good fit of the susceptibility equation for three coppers in an equilateral triangle. He further concluded that the complex exhibits antiferromagnetic exchange coupling (-79 cm^{-1} for the nitrate and -92 cm^{-1} for the perchlorate salt). His results are in good agreement

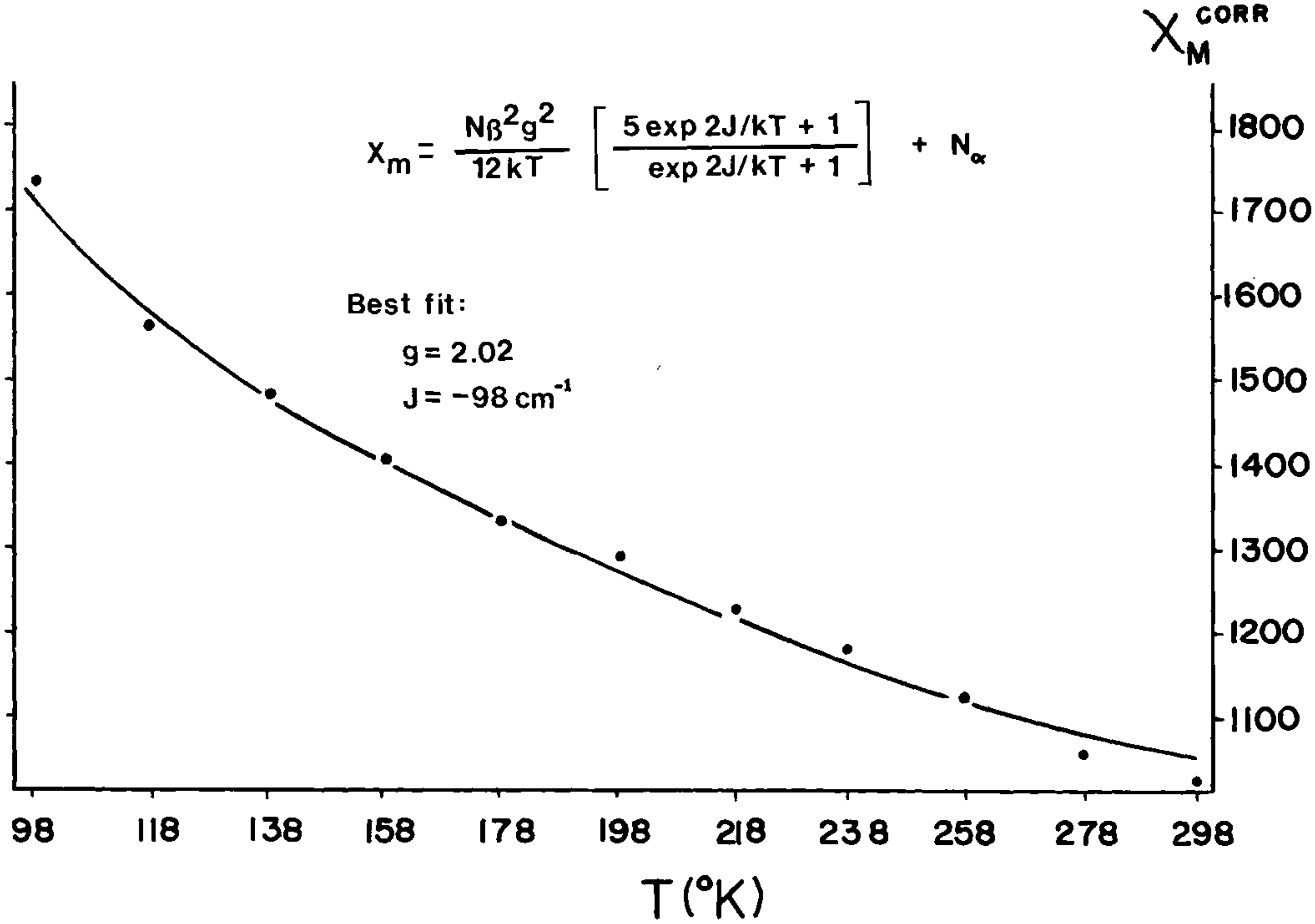


Figure 31. Graph of Molar Magnetic Susceptibility (χ_M^{corr}) vs. Temperature (°K) for $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$. Filled Circles Represent Values Observed and the Solid Line Represents Values Calculated from the Derived Equation.

with the exchange coupling constant which we obtained for the non-cyclic copper trimer ($J = -98\ cm^{-1}$). Graphic results are presented in Figure 31

Näsäkkälä's report referenced some structural parameters of a thiocyanate salt of the cation $[Cu_3(Dapo)_2(DapoH)_2]^{2+}$ which were to be published. The complete report of the structure by Smolander et. al. (43) disclosed that the tetravalent cation of this thiocyanate salt adopted the same general structure as the cation of the tetraiodide salt reported in this thesis. Each copper atom in the thiocyanate salt structure is five-coordinate; Cu1 interacts with the nitrogen of a thiocyante (Cu1-N11 dist. = 2.70 Å) whereas Cu2 and Cu3 interact with the same sulfur atom of a thiocyante group (Cu2-S1 dist. = 2.88 Å and Cu3-S1 dist = 2.82 Å).

Although Smolander did not report any magnetic studies on the complex it would be an interesting magnetic system for comparison with the four-coordinate Cu trimer system reported herein.

Charged Diimine Complexes

The intent of this study was to prepare and structurally and magnetically characterize complexes analogous to those reported for salen by Sinn and coworkers (Figure 11). The possible pentadentate ligands (Dapac or

Dapsa) were chosen for several reasons: (1) no reports on definitive structural work for complexes of these ligands had been made, (2) the possibility of the formation of intermolecular hygrogen bonded complexes exsisted and (3) bi- tri- or teranuclear complexes could be formed by this ligand. Surprisingly, these ligands did not form analogs of the salen complexes but yielded a series of compounds which were quite unique.

The lack of studies in literature on complexes of Dapac and Dapsa precludes structural comparisons to complexes reported in this thesis. The magnetic properties however, can be interpreted in terms of typical dimer-like behavior.

First, a general account of these structures will be given. A short description of each specific structure will follow to more easily reference the differences between these complexes.

Each of the complexes contains two square-planar copper(II) ions bridged by both the isopropoxide oxygen and the oxygens (three atom bridge) of an acetate group. The remaining coordination sites of each copper are filled by the phenoxide oxygens and imine nitrogens of the binucleating ligands.

Cu_2(Dapac)(OAc), crystallizes into discrete dimers and maintains a dihedral angle of 123 degrees between the distorted square-planar coordination planes of the copper atoms. The bridging Cu-O-Cu angle is 114.6 degrees. The magnetic moment shows a slight increase (1.90 - 1.97 BM) with decreasing temperature (298 - 98 °K).

Cu_2(Dapsa)(OAc)·$2CH_3CN$, crstallizes into dimers which form infinite chains via corner-to-corner interactions of mutually perpendicular planes of alternating five and six-membered rings (intradimeric Cu-Cu dist interdimeric Cu-Cu bond dist.). The dimeric molecules are planar with an average dihedral angle between the copper coordination spheres of 163 degrees. The acetonitrile molecule is non-coordinating. The effective moment of the complex decreases with temperature.

Cu_2(Dapsa)(OAc)·CH_3OH, crystallizes as discrete, planar dimers (avg. dihedral angle between planar coordination spheres = 169 degrees). The methanol molecule is non-coordinating. The effective moment dramatically decreases (1.71 - 0.93 BM) with temperature (298 - 98 °K), as does the molar susceptibility below 160 °K.

Cu_2(Dapsa)(OAc), crystallizes into discrete, dimeric units (two per asymmetric unit) with a dihedral angle between coordination planes of 163 degrees. The effective moment dramatically decreases (1.68 - 1.05 BM) with temperature, as does the molar susceptibility below a temperature of 160 °K.

The observed magnetic susceptibilities of Cu_2(Dapac)(OAc) and Cu_2(Dapsa)(OAc)·$2CH_3CN$ do not fit the dimer susceptibility equation. For Cu_2(Dapac)(OAc), this was not expected since it exhibits ferromagnetic coupling due to the bent nature of the dimer (39). $Cu_2(Dapsa)(OAc) \cdot 2CH_3CN$ however, does not obey the dimeric susceptibility equation due to the infinite chain interactions between each dimeric moiety. Although some theorectical models have been successfully applied to infinite chain systems (3) one could not be found which adequately described the complex interactions present in this structure. Therefore, no further attempt was made to fit the data which were recorded.

The molar magnetic susceptibilities of $Cu_2(Dapsa)(OAc) \cdot CH_3OH$ and $Cu_2(Dapsa)(OAc)$ fit the dimeric susceptibility equation (Bleaney-Bower). The results are listed in Table 22. The exchange coupling constants from the fit ($J = -185\ cm^{-1}$ and $J = -159$) indicate that the complexes are strongly antiferromagnetically coupled and similar to each other. This is in good agreement with similar structures and environments which the molecules assume in the crystal structures. The slight difference in J values may arise from a combination of (a) the coordinating atoms of $Cu_2(Dapsa)(OAc)$ showing a larger deviation from overall planarity than those of $Cu_2(Dapsa)(OAc) \cdot CH_3OH$ and (b) the minor difference in the Cu-O-Cu bridging angles (131 and 133 degrees respectively).

The ferromagnetically coupled complex $Cu_2(Dapac)(OaC)$ has a smaller Cu-O-Cu bridging angle (114.6 degrees) than the

Table 22. Magnetic Susceptibilities ($\chi_M^{corr} \times 10^6$ cgs and $\chi_{calc} \times 10^6$ cgs) of the Complexes $Cu_2(Dapsa)(OAc) \cdot CH_3OH$ and $Cu_2(Dapsa)(OAc)$.

T (°K)	χ_M^{corr}	χ_{calc}	χ_M^{corr}	χ_{calc}
	$Cu_2(Dapsa)(OAc) \cdot CH_3OH$		$Cu_2(Dapsa)(OAc)$	
298	1226	1217	1201	1205
278	1273	1276	1237	1245
258	1343	1337	1301	1301
238	1395	1397	1355	1360
218	1461	1455	1423	1420
198	1511	1504	1483	1480
178	1540	1538	1536	1534
158	1547	1542	1568	1575
138	1486	1494	1575	1586
118	1352	1361	1517	1540
98	1101	1099	1391	1392
	$J = -185\ cm^{-1}$ $g = 1.77$ $N_\alpha = -234.2 \times 10^{-6}$		$J = -159\ cm^{-1}$ $g = 1.52$ $N_\alpha = 68.3 \times 10^{-6}$	

other complexes in this series (avg value = 132 degrees). However, based on Hodgson's correlation of bridging angle and magnetic behavior (4), this compound should be antiferromagnetically coupled (i.e. Cu-O-Cu angle 98 degrees). In this case, the non-coplanarity of the coordination spheres in the dimer apparently plays a more important role in determing the exchange mechanism.

The resulting negative value of the temperature independent paramagnetism term (N-alpha) of Cu_2(Dapsa)(OAc)·CH_3OH is anomalous and no explanation for this behavior can be offered at this time The negative value appears to be adjusting the fit for diamagnetism in the system. This has not been previously observed.

The monomeric complex, Cu(DapsaH)·CH_3CN, shows large deviations from square planar geometry toward tetrahedral coordination. This is probably due to strain produced by the formation of the saturated six-membered ring upon chelation. The propylene backbone adopts a twisted conformation, and through the two imine nitrogens, distorts the geometry about the copper atom.

CHAPTER IV

CONCLUSIONS

The metal-metal distances in all complexes prepared were large enough to insure that a direct exchange mechanism via metal-metal overlap was excluded as a possible exchange mechanism. The complexes were assumed to be coupled through the bridging atoms in the polynuclear moiety.

The slight differences in the molecular structures of alpha-$[Cu(EIA)]_4$ and beta-$[Cu(EIA)]_4$ yielded significant magnetic differences. Based on structural parameters of the tub (beta-) form, the bridging angle was concluded to play a minor role in determing magnetic properties compared to the importance of the relative positions of the coordination spheres of the four copper(II) atoms.

The six bridging nitrogens of the complex $Fe_2(DSALZ)_3$ were determined to show a larger distortion from trigonal prismatic geometry than the sterically hindered $Co_2(PMK)_3^{4+}$. The difference may be due to the six vs five membered ring, respectively, formed upon coordination of the ligand to the metal.

The ligand Dapo was found to exhibit intermolecular hydrogen bonding in the cobalt complex

$[Co(Dapo)(DapoH)]Cl_2 \cdot 2H_2O$. The other Dapo-metal complex studied, $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$, revealed binucleating coordination of two monoanionic ligands, with the other two neutral ligands donating only their nitrogen atoms. The magnetic susceptibility equation for a bent trinuclear complex with no interactions between the end copper atoms gave a good fit with the experimentally observed values to yield an antiferromagnetic coupling contant ($J = -98$ cm^{-1}).

The structural and magnetic results of the series of complexes with Dapac and Dapsa as ligands showed that: (a) in the ferromagnetically coupled complex, $Cu_2(Dapac)(OAc)$, the bridging angle (114.6 degrees) plays a minor role compared to that of the bent nature of the dimer in deciding the overall mechanism of exchange and, (b) the complex $Cu_2(Daspa)(OAc) \cdot 2CH_3CN$ is much more weakly coupled than the analogous antiferromagnetically coupled complexes of $Cu_2(Dapsa)(OAc) \cdot CH_3OH$ or $Cu_2(Dapsa)(OAc)$ due to ferromagnetic interactions in the acetonitrile solvate complex along an infinite chain.

APPENDIX

Table A. Observed (FO) and Calculated (FC) Structure Factors for $[Cu(EIA)]_4 \cdot C_4H_9OH$.

K	L	FO	FC
H=-19			
1	11	21	8
H=-18			
0	6	14	13
0	10	26	21
0	14	23	20
0	16	13	18
1	3	12	9
1	7	19	16
1	9	11	9
1	11	13	12
1	13	11	9
1	17	30	26
2	2	26	19
2	8	17	14
2	10	13	12
2	12	18	15
2	14	19	19
2	16	25	19
3	4	13	12
3	7	15	13
3	10	22	17
3	11	11	9
3	13	22	19
3	14	21	18
4	6	19	15
4	10	21	18
4	11	12	11
H=-17			
0	2	24	22
0	4	10	10
0	8	35	30
0	10	11	10
0	14	23	23
0	16	38	35
1	1	21	18
1	5	16	11
1	7	22	19
1	9	25	20
1	15	47	44
1	18	11	8
2	6	12	9
2	8	31	27
2	10	22	20
2	14	42	36
2	16	24	24
2	18	18	15
3	1	20	16
3	2	11	7
3	4	10	8
3	7	21	19
3	8	22	19
3	9	25	23
3	12	26	24
3	15	36	31
3	16	21	20
4	2	18	17
4	4	12	8
4	6	10	11
4	7	11	9
4	8	35	31
4	11	22	21
4	13	13	10
4	14	17	13
4	16	20	18
5	1	28	16
5	2	17	13
5	4	12	9
5	6	23	22
5	7	21	21
5	9	15	14
5	10	22	19
5	12	13	13
5	14	10	9
5	15	25	23
6	4	15	11
6	5	12	11
6	7	13	13
6	8	16	12
6	9	13	11
6	10	18	5
6	11	18	18
H=-16			
0	2	16	17
0	4	32	27
0	6	44	38
0	8	19	13
0	10	28	18
0	14	23	21
0	16	26	22
0	18	15	11
0	20	11	10
1	3	21	18
1	4	15	12
1	5	33	30
1	6	16	12
1	7	21	19
1	8	13	17
1	9	29	30
1	10	13	10
1	13	33	27
1	15	14	18
1	17	22	20
1	20	10	11
2	2	33	27
2	3	10	7
2	6	33	28
2	7	22	25
2	10	27	24
2	12	39	37
2	14	14	16
2	16	36	36
3	3	20	19
3	5	23	16
3	7	19	19
3	8	21	19
3	9	27	23
3	10	21	21
3	11	19	21
3	12	15	11
3	13	32	25
3	14	21	20
3	15	12	17
3	16	12	11
3	17	10	8
3	18	17	17
4	1	14	14
4	3	18	17
4	4	25	21
4	6	39	37
4	7	20	18
4	8	23	21
4	9	24	21
4	10	13	12
4	13	15	13
4	14	22	20
4	16	12	11
5	2	35	30
5	3	12	10
5	4	25	24
5	5	24	22
5	6	32	29
5	8	34	31
5	9	20	17
5	12	15	15
5	13	20	19
5	14	11	11
5	17	11	7
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6	2	25	23
6	3	23	21
6	4	14	11
6	6	16	14
6	7	34	33
6	9	21	16
6	11	10	8
6	13	18	20
6	14	12	12
6	16	17	15
7	7	11	9
7	8	28	27
7	9	11	10
7	10	19	19
7	12	16	12
7	13	13	10
H=-15			
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0	4	17	21
0	6	59	54
0	8	37	33
0	10	37	30
0	12	21	18
0	18	12	12
0	20	16	13
1	1	49	47
1	3	9	8
1	4	32	26
1	5	10	8
1	6	16	19
1	7	52	50
1	8	24	18
1	12	19	22
1	15	10	9
1	17	11	10
1	19	28	25
2	3	19	21
2	4	11	12
2	5	24	23
2	8	39	39
2	14	39	39
2	16	20	18
2	18	12	7
2	20	29	27
3	1	35	29
3	2	23	18
3	4	12	12
3	5	10	10
3	7	46	44
3	10	15	13
3	11	10	13
3	12	13	16
3	13	12	14
3	14	17	12
3	16	11	11
3	18	19	16
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3	22	15	16
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4	4	20	17
4	5	14	13
4	6	35	33
4	7	11	12
4	8	19	18
4	9	24	25
4	10	20	16
4	11	12	11
4	12	18	9
4	14	13	14
4	18	16	17
5	1	19	16
5	4	50	46
5	6	10	9
5	7	36	35
5	8	31	30
5	10	22	21
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5	19	13	15
6	2	17	14
6	3	30	29
6	5	33	29
6	8	20	17
6	9	28	26
6	12	10	9
6	14	20	17
7	2	22	20
7	4	18	18
7	5	18	17
7	6	17	14
7	7	21	21
7	10	19	19
7	11	13	11
7	12	12	15
7	14	15	13
7	15	14	15
8	3	19	18
8	4	14	10
8	5	19	17
8	6	13	9
8	8	11	11
8	9	10	10
8	11	13	10
8	12	23	21
H=-14			
0	2	10	14
0	4	55	54
0	8	64	64
0	10	39	39
0	14	39	40
0	16	25	26
0	18	12	9
0	20	39	37
0	24	21	19
1	1	28	29
1	2	18	12
1	3	13	21
1	5	29	29
1	6	35	37
1	7	34	42
1	10	31	30
1	11	34	36
1	13	32	30
1	14	11	13
1	16	14	12
1	17	36	34
1	20	10	5
1	21	30	28
1	23	12	9
2	2	21	20
2	4	9	6
2	5	19	21
2	6	32	34
2	9	17	15
2	10	15	14
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2	16	22	22
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2	20	32	30
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2	23	11	11
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3	2	16	12
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3	10	12	13
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3	13	11	10
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3	20	24	24
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4	5	15	17
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4	14	16	14
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4	16	26	24
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6	15	17	18
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6	20	22	21
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7	18	17	17
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8	2	12	9
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8	8	19	19
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9	6	20	20
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0	4	12	15
0	6	30	33
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0	12	94	100
0	16	13	11
0	18	37	37
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1	4	43	39
1	6	14	10
1	7	26	32
1	8	33	36
1	9	33	35
1	10	37	35
1	11	75	77
1	12	23	26
1	13	12	22
1	14	21	23
1	16	11	14
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1	18	22	19
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2	14	21	21
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2	18	54	54
2	19	13	18
2	20	23	20
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2	24	23	24
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3	4	21	23
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3	7	13	15
3	8	23	22
3	9	18	25
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3	20	21	22
3	22	19	21
4	1	9	9
4	2	12	16
4	4	29	28
4	6	35	33
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4	8	15	16
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4	10	18	19
4	11	12	16
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4	15	25	23
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4	17	18	17
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4	19	12	15
4	21	26	26
5	3	9	5
5	4	17	14
5	7	16	17
5	8	11	13
5	10	29	27
5	11	43	39
5	12	15	16
5	14	46	43

Table A. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
5	16	36	36	H=-12				3	12	18	21	6	18	12	10	0	6	8	18	3	11	78	70	7	3	28	30	11	6	24	24
5	17	14	15					3	13	51	52	6	19	10	18	0	8	24	21	3	13	27	26	7	4	37	37	11	8	26	24
5	18	15	14	0	2	57	58	3	14	22	19	6	20	20	21	0	10	109	114	3	15	22	26	7	5	9	9				
5	19	26	25	0	4	27	28	3	15	17	19	7	1	15	17	0	12	57	55	3	16	20	19	7	6	33	31	H=-10			
5	20	27	30	0	6	18	15	3	17	24	28	7	2	18	19	0	14	13	10	3	17	36	34	7	7	13	10				
5	22	13	16	0	8	45	47	3	18	23	26	7	3	22	22	0	16	57	59	3	20	12	12	7	8	55	54	0	2	79	81
6	2	22	21	0	10	107	109	3	19	32	30	7	4	24	25	0	18	36	39	3	25	11	14	7	9	14	11	0	4	98	99
6	4	33	31	0	12	55	53	3	20	14	13	7	5	30	30	0	20	36	38	4	1	15	12	7	11	17	13	0	6	18	12
6	6	10	15	0	14	43	40	3	21	14	12	7	6	35	34	0	22	42	37	4	2	29	32	7	12	40	40	0	8	48	58
6	7	24	24	0	16	47	40	3	22	14	14	7	8	18	17	1	1	48	52	4	3	13	15	7	15	33	31	0	12	72	75
6	9	10	9	0	18	16	16	3	23	19	19	7	9	34	31	1	2	12	14	4	4	49	55	7	16	12	10	0	14	30	37
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6	14	16	14	0	24	22	23	4	4	15	19	7	14	9	4	1	5	64	64	4	7	64	63	8	2	37	39	0	20	44	52
6	15	42	42	1	2	62	65	4	5	23	19	7	16	11	11	1	6	19	18	4	8	55	51	8	3	33	33	0	22	15	14
6	16	28	26	1	3	68	73	4	6	8	14	7	17	27	28	1	7	27	28	4	9	50	52	8	6	42	43	0	24	43	58
6	17	14	14	1	4	9	6	4	7	31	35	7	18	29	31	1	8	16	18	4	10	70	67	8	7	46	45	0	26	11	11
6	18	25	22	1	6	38	38	4	8	11	18	7	19	16	18	1	9	68	68	4	12	34	35	8	8	46	42	1	1	144	149
6	19	16	18	1	7	28	28	4	10	35	31	8	1	14	16	1	10	46	45	4	13	17	17	8	9	35	35	1	2	58	68
6	21	28	28	1	8	29	28	4	11	30	33	8	2	22	23	1	11	96	98	4	14	10	11	8	11	22	22	1	3	10	24
7	1	15	14	1	9	97	97	4	12	63	60	8	3	13	13	1	13	17	23	4	16	27	27	8	12	20	21	1	4	16	14
7	3	15	14	1	12	55	56	4	13	30	26	8	4	38	39	1	14	58	57	4	17	23	24	8	13	13	15	1	5	78	85
7	4	16	13	1	13	63	61	4	14	28	27	8	5	31	31	1	15	18	14	4	18	20	21	8	14	17	15	1	6	28	32
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7	6	19	19	1	15	20	19	4	16	34	35	8	8	15	15	1	17	54	50	4	22	19	16	8	18	21	22	1	8	45	48
7	7	18	20	1	16	21	19	4	17	36	35	8	9	19	19	1	18	26	28	5	1	24	27	8	20	13	14	1	9	30	36
7	8	33	31	1	17	28	26	4	18	23	21	8	10	37	33	1	20	23	22	5	2	21	24	9	1	13	15	1	11	69	67
7	11	22	22	1	19	26	25	4	19	17	15	8	11	33	33	1	21	13	10	5	3	44	40	9	2	20	18	1	12	28	32
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7	15	10	9	2	2	66	69	5	1	16	18	8	17	25	24	1	24	16	17	5	8	37	36	9	5	39	39	1	18	25	28
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8	1	12	12	2	6	43	50	5	6	12	12	9	2	20	21	2	3	16	19	5	11	49	50	9	8	33	35	1	23	38	36
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8	8	12	12	2	12	77	76	5	16	54	55	9	12	36	37	2	9	38	36	5	18	30	31	9	15	22	22	2	6	68	78
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8	13	10	10	2	16	48	49	5	19	24	25	10	1	12	7	2	15	43	44	6	3	26	30	10	2	12	12	2	10	29	28
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8	15	18	17	2	20	37	36	6	1	11	14	10	3	18	18	2	21	11	14	6	5	8	9	10	5	11	11	2	14	33	29
8	17	23	23	2	21	10	12	6	2	25	29	10	5	10	8	2	24	11	11	6	7	29	28	10	6	15	14	2	15	9	18
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9	4	11	10	3	1	17	15	6	6	26	26	10	7	10	14	3	1	40	43	6	10	43	43	10	8	13	14	2	17	14	11
9	7	19	17	3	3	40	40	6	8	35	32	10	11	26	23	3	2	46	42	6	12	14	16	10	9	28	28	2	19	18	19
9	9	15	15	3	4	31	34	6	11	45	41	10	12	15	13	3	3	86	90	6	13	52	50	10	12	18	17	2	20	12	14
9	10	21	19	3	5	28	31	6	12	29	30	10	13	22	23	3	5	46	50	6	15	12	9	10	13	22	20	2	23	20	23
9	13	13	11	3	6	49	52	6	13	29	30					3	6	63	60	6	16	19	15	10	14	15	10	2	24	14	22
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Table A. (continued)

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3	6	24	31
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3	8	66	64
3	9	69	66
3	10	35	39
3	11	43	38
3	12	38	37
3	13	15	14
3	14	10	11
3	16	22	22
3	21	25	24
3	23	28	30
3	24	19	16
4	1	15	15
4	2	45	51
4	3	44	46
4	4	63	56
4	5	48	49
4	6	51	53
4	7	25	22
4	8	64	64
4	9	50	50
4	10	60	54
4	12	39	44
4	13	16	23
4	16	14	14
4	17	24	27
4	18	37	40
4	20	37	36
4	23	22	25
4	24	38	28
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5	4	23	27
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5	7	15	22
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5	9	83	88
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5	21	19	21
5	22	35	33
5	23	29	29
5	24	16	19
6	1	14	14
6	2	40	41
6	3	40	43
6	4	13	12

K	L	FO	FC
6	5	24	23
6	8	56	59
6	9	13	11
6	10	24	23
6	11	29	31
6	12	12	15
6	13	32	30
6	14	21	19
6	15	9	14
6	16	42	37
6	17	18	21
6	19	12	8
6	21	23	21
6	23	21	24
7	1	14	18
7	4	55	55
7	5	9	10
7	6	29	29
7	8	44	48
7	9	30	31
7	10	31	33
7	12	27	25
7	13	18	13
7	15	35	36
7	16	16	17
7	17	17	20
7	19	18	20
7	20	10	11
8	1	11	12
8	2	16	13
8	3	29	30
8	4	41	43
8	5	44	42
8	6	53	52
8	8	28	20
8	9	46	46
8	10	34	36
8	14	11	12
8	15	13	15
8	16	28	28
8	18	28	29
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9	3	22	22
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9	9	42	41
9	10	23	22
9	11	11	11
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9	15	28	27
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10	3	28	29
10	5	19	18
10	6	19	20
10	9	14	13

K	L	FO	FC
10	11	11	8
10	13	13	9
10	14	16	15
10	16	31	30
11	4	34	35
11	6	14	13
11	7	18	18
11	8	17	15
11	9	19	18

H= -9

K	L	FO	FC
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0	6	36	37
0	8	22	22
0	10	50	54
0	12	14	18
0	14	77	75
0	16	17	13
0	18	37	35
0	20	19	28
0	22	77	79
0	24	16	17
0	26	11	13
1	1	46	54
1	2	28	34
1	3	121	134
1	4	21	33
1	5	14	17
1	6	27	30
1	7	32	34
1	8	18	17
1	9	20	20
1	10	37	32
1	11	31	34
1	12	11	13
1	13	33	35
1	14	18	20
1	15	97	94
1	16	27	29
1	18	15	20
1	20	29	28
1	21	59	65
1	23	15	17
1	24	17	19
1	25	10	16
2	1	35	42
2	2	61	70
2	3	17	21
2	4	56	59
2	5	12	11
2	7	11	11
2	8	29	27
2	9	21	21
2	10	34	40

K	L	FO	FC
2	11	22	19
2	12	67	66
2	13	50	50
2	14	105	99
2	16	31	32
2	17	10	16
2	19	16	13
2	20	29	30
2	22	47	48
2	24	15	18
2	25	16	14
3	1	11	20
3	2	33	36
3	3	68	73
3	4	21	17
3	5	40	40
3	6	79	80
3	7	39	37
3	8	18	15
3	9	32	26
3	10	48	51
3	12	63	60
3	14	57	56
3	15	69	71
3	16	35	38
3	18	32	32
3	21	55	57
3	26	14	17
4	1	26	25
4	2	89	102
4	3	7	3
4	4	57	57
4	5	54	57
4	7	15	16
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4	25	19	18
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5	5	27	29
5	6	19	13
5	7	93	99
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5	10	50	53

K	L	FO	FC
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5	14	10	7
5	15	24	29
5	16	18	13
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5	20	34	36
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6	10	20	18
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6	16	10	5
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6	22	13	13
6	23	21	22
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7	3	25	23
7	4	25	25
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7	6	48	38
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7	13	21	25
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7	15	25	24
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7	17	35	38
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8	3	10	14
8	4	32	30
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8	6	19	16
8	7	12	11
8	8	38	35
8	9	17	19

K	L	FO	FC
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8	13	34	32
8	14	20	18
8	16	35	35
8	17	23	23
8	19	22	22
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9	7	59	55
9	9	12	12
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9	11	19	19
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11	6	21	22
11	7	25	26
11	9	17	18
11	12	17	17
12	1	14	18
12	3	13	12
12	4	21	21
12	7	18	16
12	8	20	19

H= -8

K	L	FO	FC
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0	4	48	33
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0	8	52	53
0	10	8	7
0	12	104	99
0	14	8	4
0	16	74	75
0	18	83	87
0	20	46	49
0	22	53	46
0	24	14	22
0	26	12	15
1	1	97	99

K	L	FO	FC
1	2	44	45
1	3	18	12
1	4	27	29
1	5	74	85
1	6	16	8
1	8	80	81
1	10	29	25
1	11	62	63
1	12	38	42
1	13	135	141
1	15	97	95
1	16	27	31
1	17	67	69
1	18	25	22
1	19	59	60
1	20	25	26
1	22	24	27
1	23	48	52
2	1	36	43
2	2	67	71
2	3	17	11
2	4	16	18
2	5	8	5
2	6	7	6
2	8	27	23
2	9	45	49
2	10	39	43
2	11	14	18
2	12	137	132
2	13	41	44
2	14	48	47
2	16	99	102
2	18	55	54
2	19	19	21
2	20	17	22
2	21	32	36
2	22	49	50
2	26	14	18
3	1	82	92
3	2	13	11
3	3	55	56
3	4	54	60
3	5	51	51
3	8	19	16
3	9	39	41
3	10	35	38
3	11	14	11
3	12	28	25
3	13	117	117
3	14	65	69
3	15	51	51
3	16	29	29
3	17	22	23
3	18	33	35
3	19	40	41
3	20	24	29

K	L	FO	FC
3	21	9	9
3	23	38	40
4	1	26	29
4	2	53	54
4	3	16	18
4	4	35	36
4	5	16	17
4	6	140	147
4	7	16	18
4	8	72	78
4	9	37	37
4	10	28	25
4	11	45	43
4	12	43	48
4	13	26	25
4	15	54	52
4	16	16	15
4	17	16	28
4	19	32	31
4	20	51	54
4	22	37	41
4	24	23	22
5	1	44	54
5	2	27	34
5	3	22	21
5	4	80	83
5	5	81	84
5	6	9	8
5	8	112	113
5	9	31	31
5	10	24	28
5	11	11	17
5	12	47	48
5	13	45	47
5	15	37	39
5	16	14	13
5	18	19	19
5	19	32	34
5	20	16	16
5	22	41	43
5	23	29	38
6	1	59	68
6	2	70	71
6	3	14	15
6	5	23	22
6	7	37	38
6	8	41	34
6	9	60	61
6	10	58	56
6	12	44	45
6	13	16	28
6	14	17	18
6	15	25	21
6	16	42	43
6	17	21	21
6	19	14	14

Table A. (continued)

K	L	FO	FC
6	20	18	18
6	21	33	32
6	22	18	17
6	24	14	12
7	1	48	50
7	2	8	10
7	3	11	7
7	4	12	10
7	5	16	16
7	6	13	13
7	7	35	32
7	8	13	14
7	9	11	10
7	10	26	30
7	11	13	15
7	12	20	19
7	13	20	21
7	14	52	49
7	15	37	36
7	16	24	27
7	18	11	14
7	19	20	18
7	20	25	25
7	22	13	14
8	2	17	18
8	3	10	9
8	4	16	19
8	6	24	23
8	8	63	61
8	9	26	26
8	10	9	7
8	11	21	20
8	13	31	29
8	14	15	17
8	15	36	42
8	18	21	23
8	19	18	18
8	20	32	36
8	21	23	26
9	1	28	29
9	3	18	20
9	4	19	15
9	5	27	25
9	7	43	42
9	8	24	21
9	9	36	36
9	11	15	13
9	12	21	20
9	14	21	24
9	15	24	24
9	16	15	13
9	17	28	27
9	18	13	12
9	20	20	21
10	2	32	35
10	4	20	20

K	L	FC	FC
10	7	15	17
10	8	33	35
10	9	13	9
10	10	36	33
10	12	11	10
10	13	26	25
10	15	18	19
10	16	14	13
10	17	11	11
11	1	29	30
11	4	19	21
11	7	21	21
11	10	17	15
11	11	25	24
11	14	26	26
12	1	11	8
12	3	10	10
12	5	23	20
12	6	20	19
12	8	21	19
12	10	12	12

H= -7

K	L	FC	FC
0	2	9	8
0	4	88	98
0	6	119	130
0	8	52	51
0	10	58	54
0	12	64	67
0	14	143	140
0	16	16	27
0	18	18	17
0	20	38	44
0	22	28	23
0	24	17	19
1	2	75	88
1	3	55	53
1	4	13	22
1	6	20	25
1	7	98	99
1	8	71	70
1	9	64	65
1	10	66	63
1	11	64	66
1	12	25	27
1	13	160	159
1	14	25	24
1	15	79	73
1	16	30	27
1	17	19	20
1	18	22	22
1	19	41	36
1	20	24	28
1	21	46	46
1	23	30	31

K	L	FO	FC
1	24	14	14
1	25	17	17
2	1	42	41
2	2	20	26
2	3	29	34
2	4	8	6
2	5	11	16
2	6	56	57
2	7	15	17
2	8	20	19
2	9	71	70
2	10	86	83
2	11	43	48
2	14	201	198
2	15	14	25
2	17	24	25
2	18	12	9
2	19	24	27
2	20	49	54
2	21	12	12
2	26	23	25
3	1	30	35
3	2	51	55
3	3	64	68
3	4	43	42
3	6	54	51
3	7	131	136
3	8	14	18
3	9	10	5
3	10	18	12
3	11	64	67
3	12	72	73
3	13	107	98
3	15	62	63
3	16	74	70
3	17	10	17
3	18	32	35
3	20	22	24
3	21	48	51
3	23	18	14
3	24	11	12
3	25	15	17
4	1	24	29
4	2	9	14
4	3	15	18
4	4	163	176
4	5	23	29
4	6	109	110
4	7	28	28
4	8	82	79
4	9	41	40
4	11	38	35
4	12	18	21
4	13	33	38
4	14	66	65
4	15	37	37

K	L	FO	FC
4	16	18	20
4	17	42	44
4	18	50	49
4	20	39	42
4	22	28	33
4	24	10	10
5	1	19	21
5	2	87	94
5	3	66	72
5	4	64	67
5	6	115	117
5	7	119	118
5	8	37	35
5	9	8	9
5	10	104	105
5	11	45	42
5	12	19	19
5	13	61	58
5	14	14	20
5	16	14	15
5	18	27	26
5	20	13	17
5	21	38	42
5	22	20	20
5	24	15	19
6	1	32	36
6	2	27	30
6	4	20	24
6	5	92	92
6	6	55	55
6	7	36	34
6	8	50	54
6	9	54	51
6	10	59	51
6	11	72	78
6	12	20	21
6	13	16	16
6	14	60	63
6	15	9	10
6	17	15	19
6	19	11	14
6	20	26	22
6	23	16	17
7	2	36	37
7	3	15	14
7	4	60	57
7	5	30	31
7	6	20	21
7	7	57	59
7	9	17	17
7	10	34	34
7	11	13	18
7	12	56	57
7	13	25	25
7	14	13	8
7	16	40	42

K	L	FO	FC
7	18	31	29
7	21	33	33
8	1	11	13
8	2	35	33
8	3	25	27
8	4	28	28
8	5	40	40
8	6	62	68
8	7	26	25
8	9	24	22
8	10	21	19
8	11	49	50
8	13	32	31
8	15	37	35
8	16	25	25
8	17	37	36
8	18	47	44
8	19	19	20
8	20	22	22
8	22	15	17
9	1	18	19
9	4	19	21
9	5	21	20
9	6	39	40
9	7	45	43
9	8	20	18
9	9	50	45
9	10	48	48
9	12	15	17
9	14	18	12
9	15	16	17
9	17	10	6
9	18	23	24
9	19	18	18
9	20	18	15
10	2	40	36
10	5	21	21
10	6	16	19
10	8	53	50
10	9	27	25
10	11	37	37
10	12	29	26
10	14	20	19
10	16	17	19
10	17	19	19
11	2	17	17
11	3	22	22
11	4	11	12
11	6	12	9
11	9	38	40
11	11	27	27
11	12	31	31
11	14	14	11
11	15	11	10
12	1	18	18
12	2	25	23

K	L	FC	FC
12	3	27	24
12	4	19	18
12	5	10	4
12	6	12	12
12	7	10	10
12	8	16	15
12	10	16	17
12	11	14	16

H= -6

K	L	FC	FC
0	2	63	55
0	4	144	167
0	6	65	63
0	8	124	127
0	10	96	105
0	12	76	76
0	14	81	83
0	16	15	12
0	18	35	30
0	20	22	23
0	22	31	29
0	24	24	21
0	26	22	27
1	1	24	30
1	2	46	54
1	3	57	70
1	5	189	205
1	6	65	61
1	7	6	8
1	8	83	78
1	9	66	62
1	10	98	93
1	11	119	116
1	12	48	46
1	13	26	23
1	14	43	39
1	15	77	72
1	18	35	33
1	19	15	17
1	20	22	21
1	21	13	25
1	23	14	13
1	24	11	14
2	2	52	57
2	3	36	35
2	4	143	140
2	5	55	48
2	6	72	66
2	7	100	87
2	8	18	11
2	9	8	11
2	10	19	20
2	11	39	46
2	12	163	184
2	14	53	56

K	L	FO	FC
2	16	22	28
2	18	33	30
2	19	21	26
2	21	10	11
2	22	11	9
2	24	39	43
2	26	33	38
3	1	53	57
3	2	38	48
3	3	82	77
3	4	136	125
3	5	210	215
3	6	61	60
3	7	62	67
3	8	28	36
3	10	51	48
3	11	106	104
3	12	15	19
3	13	56	56
3	14	58	59
3	15	76	75
3	17	29	35
3	18	52	58
3	19	49	48
3	21	12	11
3	22	14	12
3	23	15	17
3	24	16	17
3	26	15	16
4	1	45	50
4	2	130	137
4	3	38	43
4	4	160	166
4	5	86	89
4	6	114	113
4	7	93	96
4	8	129	126
4	9	18	18
4	10	58	53
4	11	13	17
4	12	68	71
4	13	68	71
4	14	44	40
4	16	38	41
4	17	24	28
4	18	21	20
4	19	20	19
4	20	51	54
4	22	21	21
4	24	11	15
4	25	12	15
5	1	6	5
5	2	126	135
5	3	42	39
5	4	59	58
5	5	96	103

K	L	FO	FC
5	6	125	128
5	7	70	64
5	8	133	138
5	9	31	21
5	10	40	38
5	11	67	68
5	12	69	64
5	13	21	14
5	15	23	20
5	16	12	18
5	17	19	21
5	19	48	51
5	22	10	15
5	24	14	14
6	1	73	78
6	2	34	37
6	3	95	99
6	4	32	34
6	5	52	52
6	6	35	37
6	7	112	118
6	9	50	58
6	10	19	19
6	11	57	55
6	12	81	77
6	13	36	38
6	14	24	21
6	18	10	11
6	24	14	16
7	1	41	42
7	2	75	88
7	3	12	15
7	4	30	31
7	5	63	68
7	6	74	76
7	7	56	52
7	8	41	42
7	9	41	41
7	10	29	27
7	11	17	19
7	12	10	9
7	13	13	15
7	14	58	59
7	18	19	28
7	19	47	48
7	21	19	22
7	22	13	11
8	1	50	54
8	2	49	49
8	3	27	26
8	4	38	38
8	5	27	23
8	6	25	23
8	7	79	88
8	8	35	38
8	9	40	45

Table A. (continued)

K	L	FO	FC
8	10	12	13
8	12	13	13
8	13	44	45
8	14	14	11
8	15	13	19
8	16	36	36
8	18	28	27
8	19	17	17
8	20	29	29
8	22	21	21
9	2	20	23
9	4	19	21
9	5	43	42
9	6	56	58
9	7	66	65
9	8	57	55
9	9	20	19
9	10	10	7
9	11	17	16
9	12	39	38
9	13	11	8
9	17	17	18
9	19	40	43
9	20	16	17
10	1	21	22
10	2	10	8
10	3	20	21
10	4	17	16
10	5	11	10
10	6	32	33
10	7	47	46
10	9	19	16
10	10	42	44
10	11	32	29
10	12	39	36
10	13	32	30
10	15	13	14
11	1	32	27
11	2	11	15
11	3	14	16
11	4	15	15
11	5	11	10
11	7	34	34
11	9	40	41
11	10	19	19
11	12	12	15
11	13	20	19
11	14	36	35
11	16	17	14
12	1	26	23
12	2	36	31
12	5	20	18
12	8	12	12
12	9	11	15
12	10	22	23
13	3	22	20

K	L	FC	FC
13	4	15	11
13	5	16	14
13	6	16	15
	H= -5		
0	2	180	195
0	4	62	55
0	6	217	208
0	8	13	19
0	10	36	39
0	12	129	128
0	14	47	44
0	16	21	15
0	18	48	56
0	22	9	7
0	24	48	39
0	26	17	19
1	1	32	36
1	3	118	119
1	4	78	79
1	5	93	85
1	6	71	53
1	7	54	58
1	8	98	94
1	9	21	22
1	11	45	36
1	12	102	95
1	13	91	93
1	14	28	24
1	15	70	73
1	16	26	33
1	17	43	34
1	18	34	38
1	20	27	29
1	22	13	15
1	25	55	60
2	1	27	24
2	2	47	55
2	4	32	40
2	5	58	48
2	6	115	113
2	7	16	21
2	8	42	48
2	9	79	73
2	10	82	90
2	11	56	58
2	12	66	64
2	13	40	36
2	14	56	51
2	15	8	2
2	16	25	22
2	17	17	20
2	18	39	38
2	19	9	9
2	20	14	17

K	L	FO	FC
2	22	36	36
2	24	52	56
2	26	20	24
3	1	69	70
3	2	159	170
3	3	106	110
3	4	26	19
3	5	149	145
3	6	98	85
3	7	59	50
3	8	50	53
3	9	13	13
3	10	30	26
3	11	19	19
3	12	55	52
3	13	95	100
3	15	66	68
3	16	37	38
3	17	59	54
3	18	14	13
3	19	30	32
3	20	12	15
3	22	28	31
3	25	43	48
4	1	31	24
4	2	127	139
4	3	171	167
4	4	113	104
4	6	229	227
4	7	57	62
4	8	33	32
4	9	63	63
4	10	35	25
4	11	43	42
4	12	30	36
4	13	31	33
4	14	23	22
4	16	10	10
4	18	96	100
4	19	15	22
4	20	28	27
4	21	25	26
4	23	20	23
4	24	17	22
5	1	13	5
5	2	55	49
5	3	103	112
5	4	174	183
5	5	76	69
5	6	53	44
5	7	100	100
5	8	104	95
5	9	36	37
5	10	43	45
5	11	28	30
5	12	24	27

K	L	FO	FC
5	13	51	47
5	15	28	24
5	16	44	41
5	17	47	46
5	18	12	12
5	20	32	34
5	24	12	10
5	25	26	27
6	1	8	6
6	2	15	21
6	3	152	156
6	4	34	37
6	5	106	108
6	6	55	60
6	7	29	22
6	8	27	25
6	9	71	68
6	10	110	106
6	12	30	25
6	13	27	28
6	14	25	21
6	16	10	8
6	17	17	19
6	20	15	18
6	21	26	31
6	23	14	15
6	24	25	32
7	1	36	39
7	2	121	125
7	3	27	27
7	4	88	90
7	5	48	47
7	6	23	22
7	7	16	16
7	9	32	32
7	10	18	13
7	11	27	28
7	12	39	38
7	13	27	27
7	14	13	14
7	16	13	10
7	17	19	23
7	19	31	34
7	22	28	28
8	1	28	31
8	2	8	7
8	3	75	67
8	4	64	64
8	5	45	44
8	6	68	66
8	7	28	27
8	8	31	29
8	9	29	27
8	11	20	24
8	13	10	9
8	14	9	12

K	L	FQ	FC
8	15	9	11
8	18	31	31
8	20	44	45
9	1	21	25
9	2	11	15
9	3	50	52
9	4	47	45
9	5	17	17
9	6	37	35
9	7	16	13
9	8	51	52
9	10	41	43
9	11	21	17
9	12	10	9
9	13	23	23
9	14	9	5
9	16	18	19
9	17	35	31
9	19	21	20
9	20	12	14
10	2	9	10
10	3	32	33
10	4	13	13
10	5	43	40
10	8	46	42
10	9	40	38
10	10	64	65
10	11	18	19
10	14	34	35
10	18	11	6
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11	2	29	28
11	4	14	16
11	7	25	22
11	8	18	16
11	9	22	19
11	10	14	15
11	11	44	44
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11	16	16	15
12	1	23	18
12	3	27	23
12	4	26	24
12	6	22	21
12	10	23	23
12	11	24	23
12	13	16	15
13	1	35	35
13	2	11	10
13	3	31	30
13	4	22	22
13	6	13	15

K	L	FO	FC
	H= -4		
0	2	37	22
0	4	101	109
0	6	27	15
0	8	53	41
0	10	48	25
0	12	66	66
0	14	7	15
0	16	163	166
0	18	29	31
0	20	50	47
0	22	24	29
0	24	12	9
0	26	32	34
1	1	49	74
1	3	13	22
1	4	27	16
1	5	52	48
1	6	67	64
1	7	72	75
1	8	50	40
1	9	63	58
1	10	81	78
1	11	26	22
1	12	63	56
1	13	42	46
1	14	79	78
1	15	76	79
1	17	44	44
1	18	32	35
1	19	11	16
1	20	31	31
1	21	32	29
1	23	50	53
1	25	37	38
2	2	52	46
2	3	69	49
2	4	64	63
2	5	62	68
2	6	137	137
2	8	91	98
2	9	93	89
2	10	15	12
2	11	104	91
2	12	165	109
2	13	71	70
2	14	11	6
2	16	87	86
2	18	18	13
2	19	12	13
2	20	10	9
2	22	53	55
2	24	16	17
2	26	49	54
3	1	8	1

K	L	FO	FC
3	2	18	22
3	3	113	107
3	4	108	111
3	5	37	39
3	6	57	58
3	7	105	91
3	8	42	46
3	9	25	27
3	10	117	117
3	11	113	109
3	12	23	32
3	13	43	46
3	14	16	16
3	15	60	55
3	17	45	47
3	19	46	48
3	20	40	42
3	23	49	53
3	24	26	31
3	25	27	31
4	1	97	93
4	2	58	57
4	3	75	64
4	4	229	227
4	5	74	64
4	6	21	10
4	7	21	16
4	8	28	29
4	9	20	14
4	10	7	6
4	11	23	25
4	12	21	20
4	13	25	26
4	14	9	10
4	15	9	14
4	16	109	113
4	17	34	33
4	18	57	62
4	19	40	44
4	20	35	39
4	22	16	20
4	23	25	25
4	25	13	21
5	1	60	55
5	2	84	83
5	3	86	90
5	4	36	34
5	5	111	111
5	6	67	59
5	7	30	36
5	8	11	6
5	9	44	43
5	10	12	11
5	11	61	58
5	12	23	28
5	13	18	19

K	L	FQ	FC
5	14	57	54
5	15	35	29
5	16	68	66
5	17	18	23
5	18	57	68
5	19	46	58
5	22	22	28
5	23	30	34
5	24	12	17
6	1	72	68
6	2	28	26
6	3	35	36
6	4	49	51
6	5	78	72
6	6	11	18
6	7	29	31
6	8	99	97
6	9	18	18
6	10	36	37
6	11	10	4
6	12	66	59
6	13	41	39
6	14	29	28
6	15	12	11
6	16	17	22
6	17	57	61
6	19	40	43
6	21	14	17
6	22	31	34
6	23	18	24
7	1	34	36
7	2	23	23
7	3	17	18
7	4	78	75
7	5	31	32
7	6	10	5
7	7	9	9
7	9	58	53
7	10	48	45
7	10	49	45
7	11	72	65
7	12	26	21
7	14	23	19
7	17	14	16
7	18	26	29
7	20	25	26
7	21	16	14
7	23	15	19
8	1	43	48
8	2	94	88
8	3	23	18
8	4	101	94
8	5	32	27
8	6	15	12
8	9	16	18
8	10	24	21

Table A. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FC	FC	K	L	FO	FC	K	L	FO	FC
8	11	30	28	13	2	26	24	2	19	19	24	5	16	51	51	8	16	27	29	13	4	23	28	2	17	17	16	5	15	94	89
8	14	9	10	13	4	11	11	2	20	24	21	5	17	74	81	8	17	13	14	13	5	22	22	2	18	29	27	5	16	98	102
8	16	29	31	13	5	21	19	2	24	68	70	5	18	53	55	8	19	16	17					2	22	51	54	5	17	20	32
8	17	23	23	13	6	18	16	3	1	39	46	5	19	10	18	8	20	12	14		H= -2			2	24	14	16	5	18	29	33
8	18	42	42	13	8	12	12	3	2	46	52	5	20	56	59	8	21	33	33					2	26	11	14	5	20	18	21
8	19	24	26					3	3	28	25	5	23	23	24	9	1	24	26					3	1	75	78	5	23	12	15
8	20	11	8		H= -3			3	4	100	95	5	25	16	13	9	2	46	42	0	2	87	51	3	2	66	57	6	3	37	40
9	1	56	53					3	5	39	44	6	2	16	13	9	3	75	69	0	4	156	142	3	3	16	9	6	4	9	6
9	2	25	22	0	2	207	233	3	6	63	51	6	4	40	41	9	4	37	36					3	4	25	23	6	5	71	71
9	4	36	34					3	7	87	86	6	5	12	10	9	5	65	64	0	6	28	33	3	5	8	8	6	7	23	21
9	5	49	52	0	4	125	115	3	8	153	146	6	6	48	46	9	6	45	41	0	8	140	123	3	6	113	112	6	8	153	148
9	6	50	47	0	6	93	102	3	9	111	95	6	7	8	10	9	9	34	31	0	10	67	60	3	7	116	119	6	9	70	67
9	7	22	21	0	8	52	62	3	10	108	87	6	8	12	15	9	10	23	22	0	12	54	50	3	8	50	36	6	10	69	64
9	8	21	21	0	10	124	122	3	12	71	69	6	9	30	28	9	11	13	16	0	14	167	161	3	9	83	74	6	11	68	67
9	9	19	19	0	12	57	57	3	14	39	36	6	10	107	107	9	12	11	9	0	16	70	59	3	10	171	152	6	12	31	29
9	10	9	10	0	14	100	99	3	15	13	12	6	12	36	35	9	13	17	14	0	18	78	74	3	11	69	71	6	13	75	75
9	11	32	32	0	16	138	132	3	17	106	105	6	13	29	29	9	14	40	41	0	20	23	20	3	14	63	57	6	15	34	35
9	12	13	13	0	18	45	51	3	20	29	28	6	14	22	19	9	15	15	15	0	24	15	15	3	15	94	93	6	17	56	56
9	14	33	30	0	22	16	14	3	21	11	15	6	15	81	82	9	16	42	44	0	26	13	12	3	16	9	19	6	22	38	44
9	15	13	8	0	24	40	39	3	22	27	29	6	16	12	14	9	17	22	26	1	1	149	136	3	17	32	32	7	1	14	16
9	16	15	16	0	26	11	14	3	23	30	34	6	19	53	55	9	18	12	12	1	2	44	63	3	19	14	16	7	2	31	29
9	17	13	10	1	1	89	87	3	25	21	25	6	20	12	15	9	19	28	27	1	3	132	83	3	20	16	16	7	3	60	63
9	18	34	38	1	2	97	90	3	26	12	17	6	21	24	28	9	20	28	29	1	4	39	27	3	23	27	29	7	4	74	67
9	19	20	23	1	3	15	35	4	1	13	26	6	24	36	36	10	1	10	13	1	5	193	155	3	25	24	25	7	5	58	68
10	1	34	31	1	4	138	121	4	2	155	151	7	1	14	8	10	2	15	16	1	6	132	130	4	1	11	25	7	6	95	89
10	2	12	13	1	5	72	78	4	3	35	27	7	2	17	14	10	4	14	12	1	7	77	69	4	2	93	85	7	7	35	39
10	3	22	25	1	6	63	68	4	4	12	7	7	3	29	27	10	5	37	36	1	8	27	35	4	3	15	5	7	8	45	45
10	4	9	9	1	7	158	151	4	5	68	65	7	4	51	50	10	7	19	18	1	9	117	109	4	4	90	87	7	9	27	25
10	6	12	11	1	8	112	95	4	6	47	49	7	5	40	40	10	9	15	13	1	11	126	123	4	5	81	81	7	10	121	118
10	7	26	23	1	9	61	48	4	7	120	102	7	7	69	67	10	10	50	49	1	12	98	94	4	6	56	48	7	11	38	40
10	8	59	56	1	10	52	55	4	8	38	33	7	8	87	83	10	11	11	13	1	13	66	58	4	7	18	24	7	12	49	46
10	10	15	13	1	11	83	76	4	9	87	80	7	9	92	91	10	12	43	43	1	14	19	26	4	8	178	167	7	14	27	21
10	12	49	47	1	12	45	45	4	10	89	88	7	11	12	11	10	13	13	13	1	15	132	133	4	9	14	12	7	15	23	21
10	13	14	18	1	13	42	35	4	11	27	25	7	12	66	67	10	15	35	35	1	16	44	49	4	11	68	66	7	16	19	19
10	14	33	33	1	14	56	53	4	13	22	17	7	13	13	11	10	18	15	15	1	17	48	44	4	13	28	26	7	17	12	15
10	17	21	22	1	15	15	9	4	14	74	77	7	14	40	41	11	2	11	8	1	19	11	19	4	14	90	88	7	18	18	22
10	18	23	23	1	16	45	47	4	15	61	63	7	16	18	18	11	3	17	17	1	20	44	43	4	15	56	60	7	19	10	18
11	1	17	28	1	17	109	100	4	16	101	97	7	17	13	28	11	4	9	9	1	21	14	18	4	16	57	54	7	20	15	16
11	2	18	7	1	18	38	44	4	18	56	59	7	19	12	16	11	5	15	16	1	23	15	13	4	17	27	27	7	21	15	18
11	4	9	8	1	19	16	19	4	19	26	28	7	20	29	32	11	6	10	6	1	25	23	24	4	18	73	78	8	1	28	26
11	5	11	12	1	22	13	18	4	20	31	32	7	21	25	26	11	7	15	16	2	1	69	64	4	22	21	23	8	2	15	16
11	6	19	20	1	23	38	42	4	21	37	37	7	22	34	35	11	8	48	47	2	2	9	5	4	24	15	13	8	3	12	9
11	7	13	12	1	25	20	20	4	24	33	34	8	1	18	18	11	9	42	39	2	3	59	58	5	1	120	112	8	4	108	99
11	9	28	27	2	1	20	21	5	1	24	15	8	2	117	112	11	11	27	21	2	4	170	149	5	2	92	87	8	5	64	62
11	10	28	28	2	2	59	50	5	2	6	5	8	3	22	22	11	12	21	22	2	5	37	41	5	3	95	85	8	6	75	72
11	11	57	56	2	4	64	64	5	3	97	90	8	4	10	11	11	13	35	33	2	6	78	65	5	4	90	91	8	7	45	43
11	14	14	15	2	5	24	19	5	4	22	17	8	5	15	7	11	15	18	18	2	7	72	77	5	5	15	10	8	8	38	36
11	15	18	18	2	6	203	188	5	5	70	74	8	6	57	53	12	2	53	50	2	8	361	340	5	6	53	51	8	9	61	59
12	1	27	23	2	8	35	38	5	6	62	55	8	7	30	30	12	3	10	6	2	9	15	19	5	7	81	77	8	11	78	75
12	2	47	44	2	9	166	148	5	7	32	34	8	8	10	8	12	6	24	24	2	10	122	106	5	8	11	11	8	12	29	28
12	4	41	40	2	10	247	251	5	8	32	28	8	9	58	57	12	7	17	21	2	11	129	124	5	9	52	44	8	14	27	29
12	5	12	6	2	12	7	10	5	9	79	75	8	10	8	8	12	8	11	6	2	12	117	119	5	10	52	50	8	15	19	16
12	9	20	22	2	13	49	45	5	10	44	44	8	12	9	6	12	11	21	19	2	13	33	31	5	11	32	35	8	16	27	26
12	10	21	22	2	15	39	42	5	12	19	20	8	13	56	55	12	12	29	30	2	14	44	51	5	12	95	90	8	17	30	30
12	13	13	12	2	16	72	72	5	14	95	93	8	14	28	28	12	13	14	13	2	15	39	39	5	13	14	17	8	18	38	39
13	1	41	40	2	18	37	39	5	15	33	30	8	15	33	32	13	3	32	31	2	16	30	31	5	14	27	28	8	19	15	28

Table A. (continued)

K	L	FO	FC	K	L	FC	FC	K	L	FC	FC	K	L	FO	FC	K	L	FC	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
8	20	16	17		H= -1			3	7	18	15	6	12	24	27	10	2	24	23	1	22	36	40	5	13	42	40	8	12	52	51
9	1	54	46					3	8	167	163	6	13	64	63	10	4	56	56	1	25	20	31	5	14	14	18	8	13	28	27
9	2	67	63	0	4	242	215	3	9	183	174	6	14	30	25	10	5	30	24	2	1	25	6	5	15	59	55	8	14	48	58
9	3	90	84					3	12	73	75	6	15	30	30	10	6	49	49	2	2	27	46	5	16	18	15	8	15	26	26
9	4	60	56	0	6	80	60	3	15	52	57	6	16	24	23	10	7	16	16	2	3	129	97	5	17	24	27	8	18	18	17
9	5	10	6	0	8	55	95	3	17	29	47	6	17	23	24	10	9	10	12	2	4	124	91	5	19	30	31	9	1	19	19
9	6	17	18	0	10	108	91	3	21	33	35	6	18	12	12	10	12	16	15	2	5	89	91	5	21	21	25	9	2	108	106
9	7	16	13	0	12	109	98	3	23	15	23	6	20	36	39	10	13	22	24	2	6	212	201	5	22	22	28	9	3	52	51
9	10	10	7	0	14	79	77	3	25	12	11	7	1	58	58	10	14	23	23	2	8	165	151	5	24	12	15	9	4	48	47
9	12	41	40	0	16	138	130	4	1	70	63	7	2	66	64	10	15	29	27	2	10	139	130	6	0	113	110	9	5	46	46
9	13	20	20	0	18	42	37	4	2	215	200	7	3	36	31	10	16	10	11	2	12	47	45	6	1	46	48	9	6	28	22
9	14	17	14	0	20	19	22	4	3	34	22	7	4	41	39	10	18	10	10	2	14	20	21	6	2	10	5	9	7	33	29
9	15	26	29	0	24	15	15	4	4	48	43	7	5	26	23	11	1	19	20	2	18	37	39	6	3	50	53	9	9	10	8
9	16	49	46	1	1	157	189	4	5	44	41	7	6	100	92	11	2	19	19	2	22	30	51	6	4	100	100	9	10	13	14
9	17	16	20	1	2	93	96	4	6	39	40	7	7	95	93	11	3	40	38	3	1	36	8	6	5	56	55	9	11	52	51
9	18	32	34	1	3	153	108	4	7	108	108	7	8	151	139	11	4	23	19	3	2	25	28	6	6	72	71	9	12	25	25
10	2	40	38	1	4	146	141	4	8	113	113	7	9	79	77	11	5	15	14	3	3	123	121	6	7	68	61	9	14	17	18
10	3	53	55	1	5	13	57	4	9	124	112	7	10	38	35	11	6	14	14	3	4	148	150	6	8	95	96	9	15	35	38
10	5	18	15	1	6	139	110	4	10	51	49	7	12	80	81	11	7	17	17	3	5	124	112	6	9	52	51	9	16	16	13
10	6	35	34	1	7	67	66	4	11	50	47	7	13	29	20	11	8	43	43	3	6	75	71	6	10	74	67	9	17	21	23
10	8	60	58	1	8	48	39	4	12	28	31	7	17	10	12	11	9	9	11	3	7	152	148	6	11	12	14	10	0	32	31
10	9	10	6	1	9	184	176	4	13	50	48	7	18	17	16	11	11	35	33	3	8	58	48	6	12	14	18	10	1	53	54
10	10	24	25	1	10	70	68	4	14	36	45	7	21	19	22	11	12	21	18	3	9	38	41	6	13	30	34	10	2	35	33
10	11	22	23	1	11	24	24	4	16	116	114	7	22	16	17	11	13	16	15	3	10	106	104	6	14	21	22	10	3	62	66
10	13	22	20	1	12	33	28	4	20	9	6	8	1	37	37	11	14	11	11	3	11	26	34	6	15	27	25	10	4	68	67
10	14	21	21	1	13	104	95	4	25	16	15	8	2	102	99	12	1	15	14	3	12	73	67	6	17	26	28	10	5	19	14
10	15	16	16	1	14	45	43	5	1	86	77	8	3	57	60	12	2	27	28	3	16	47	56	6	18	26	24	10	8	39	39
10	17	31	33	1	15	46	58	5	2	9	9	8	4	71	69	12	4	44	44	3	19	29	45	6	21	24	25	10	10	19	16
11	3	33	32	1	17	35	34	5	3	16	15	8	5	20	20	12	7	33	33	3	25	14	13	6	22	25	29	10	11	17	19
11	4	12	13	1	18	35	36	5	4	11	16	8	6	31	30	12	10	28	26	4	0	215	221	6	23	14	17	10	12	12	16
11	5	14	19	1	20	24	23	5	5	7	8	8	7	88	87	12	13	12	12	4	1	54	55	7	1	12	13	10	13	30	28
11	6	44	42	1	22	24	28	5	6	141	128	8	8	23	27	13	1	23	23	4	2	38	44	7	4	101	94	10	14	14	15
11	7	18	9	1	25	28	22	5	7	10	10	8	9	59	55	13	3	23	20	4	3	95	73	7	5	77	77	10	17	10	8
11	9	16	9	2	1	46	21	5	8	58	68	8	10	33	34	13	4	16	19	4	4	115	107	7	6	63	61	11	1	35	35
11	10	34	35	2	2	92	104	5	9	120	126	8	11	38	42	13	5	34	31	4	5	67	66	7	7	131	130	11	4	31	32
11	11	19	18	2	3	41	47	5	10	19	22	8	12	46	44	13	7	14	11	4	6	66	60	7	8	112	108	11	5	43	45
11	12	15	14	2	4	306	284	5	11	7	10	8	13	39	35					4	7	43	44	7	10	57	56	11	6	41	48
11	13	42	39	2	5	177	135	5	12	18	20	8	14	34	38		H= 0			4	9	72	74	7	11	33	34	11	7	16	18
12	1	16	13	2	6	320	266	5	13	67	63	8	16	45	46					4	10	45	41	7	12	67	65	11	8	31	29
12	2	12	9	2	7	25	9	5	14	93	96	8	18	17	18	0	4	214	203	4	12	22	31	7	13	25	19	11	9	17	14
12	3	14	15	2	8	220	219	5	15	34	37	9	1	59	57	0	6	22	29	4	13	18	19	7	14	36	35	11	10	17	17
12	4	37	36	2	9	168	148	5	17	38	43	9	2	54	55	0	10	16	15	4	14	107	107	7	15	40	38	11	11	9	6
12	5	17	17	2	10	164	152	5	18	23	30	9	4	47	48	0	12	79	77	4	16	14	11	7	16	40	42	11	15	21	21
12	6	24	23	2	12	25	27	5	21	23	23	9	5	67	64	0	14	161	159	4	17	43	44	7	19	23	24	12	2	35	37
12	8	15	14	2	13	10	10	5	23	16	21	9	6	33	29	0	18	8	6	4	21	22	31	7	20	32	32	12	3	19	17
12	9	32	30	2	16	63	59	6	1	42	48	9	7	50	49	0	20	37	41	5	1	97	93	7	21	22	24	12	4	11	11
12	10	19	18	2	18	9	14	6	2	75	75	9	8	17	15	0	22	16	14	5	2	69	81	8	0	84	89	12	5	21	25
12	11	14	12	2	20	31	35	6	3	38	38	9	10	30	30	0	24	18	21	5	3	62	54	8	2	36	40	12	6	27	27
12	12	32	31	2	21	13	27	6	4	11	12	9	11	18	18	1	3	23	16	5	4	106	95	8	3	54	48	12	9	16	14
13	1	30	29	2	24	25	27	6	5	61	61	9	12	15	13	1	4	20	13	5	5	28	28	8	4	19	17	12	11	12	12
13	2	31	31	3	1	63	57	6	6	127	122	9	13	36	40	1	5	39	30	5	6	43	42	8	5	56	53	12	12	19	19
13	3	33	33	3	2	8	8	6	7	107	103	9	14	42	43	1	6	15	15	5	7	88	89	8	6	35	34	13	1	15	13
13	4	10	10	3	3	121	112	6	8	94	94	9	16	17	15	1	7	127	119	5	8	58	55	8	7	10	9	13	2	15	17
13	7	20	17	3	4	111	103	6	9	35	31	9	17	15	15	1	8	14	43	5	9	80	69	8	8	52	49	13	3	21	20
13	9	15	13	3	5	56	90	6	10	70	67	9	18	24	24	1	15	63	78	5	11	11	12	8	9	71	70	13	5	37	37
				3	6	102	97	6	11	17	17	10	1	77	76	1	19	52	55	5	12	22	22	8	10	54	53				

Table A. (continued)

K	L	FO	FC
	H= 1		
0	4	63	50
0	6	18	14
0	8	21	23
0	10	95	98
0	12	183	180
0	14	88	83
0	16	38	39
0	18	27	27
0	20	51	50
0	22	38	39
0	24	12	14
1	0	126	144
1	2	36	35
1	3	71	51
1	4	182	184
1	5	66	55
1	6	10	9
1	7	34	31
1	8	23	21
1	9	16	17
1	10	45	44
1	11	34	38
1	13	148	149
1	14	56	62
1	15	17	24
1	17	43	48
1	21	19	54
1	24	13	22
2	0	34	79
2	1	44	21
2	2	54	33
2	3	66	82
2	4	77	76
2	5	124	111
2	6	91	96
2	8	166	158
2	9	21	16
2	10	60	50
2	11	10	15
2	12	28	26
2	13	14	19
2	14	61	60
2	15	35	38
2	16	45	49
2	17	44	46
2	20	78	85
2	23	16	19
3	0	102	87
3	1	133	124
3	2	13	1
3	3	31	15
3	4	110	98
3	5	106	94
3	6	125	119
3	7	13	12
3	8	44	37
3	9	66	66
3	10	87	77
3	11	47	40
3	12	40	38
3	13	49	48
3	14	48	47
3	16	35	34
3	17	63	64
3	18	62	66
3	19	31	40
3	21	42	50
4	0	87	88
4	1	10	3
4	2	115	112
4	3	49	44
4	4	45	37
4	5	66	63
4	6	42	46
4	7	10	3
4	8	33	30
4	9	20	21
4	10	68	64
4	11	18	17
4	12	66	69
4	13	54	50
4	14	13	9
4	15	33	33
4	16	17	18
4	17	27	34
4	18	26	26
4	19	29	33
4	20	36	40
4	23	15	17
5	0	127	134
5	1	87	91
5	2	39	28
5	3	40	48
5	4	88	91
5	5	75	71
5	6	22	14
5	7	25	27
5	8	76	70
5	10	42	45
5	12	78	74
5	13	42	43
5	15	23	21
5	16	9	8
5	17	34	34
5	18	13	17
5	19	28	26
5	21	21	23
6	0	11	7
6	1	8	9
6	2	36	35
6	3	17	6
6	4	41	36
6	5	44	39
6	6	139	136
6	7	32	33
6	8	129	125
6	9	33	28
6	10	8	11
6	11	39	34
6	13	34	32
6	14	9	7
6	15	35	36
6	17	24	25
6	19	26	28
6	20	49	50
6	22	14	15
7	1	21	23
7	2	42	40
7	3	48	45
7	4	12	15
7	5	118	110
7	6	60	57
7	7	12	13
7	8	15	15
7	9	62	56
7	10	68	67
7	11	12	14
7	12	14	16
7	13	51	49
7	14	57	58
7	15	14	16
7	16	25	23
7	18	52	51
7	19	22	24
8	1	14	19
8	2	58	63
8	3	10	9
8	4	15	15
8	5	26	25
8	6	53	55
8	7	32	25
8	8	34	34
8	9	26	30
8	10	28	25
8	12	57	60
8	13	33	33
8	15	13	12
8	16	39	42
8	17	37	37
8	18	18	17
8	19	28	27
9	0	105	109
9	1	49	49
9	4	65	64
9	5	40	43
9	7	19	12
9	8	13	13
9	10	21	25
9	11	12	12
9	12	14	16
9	13	30	31
9	14	25	24
9	15	34	36
9	16	18	20
10	0	14	16
10	1	45	51
10	2	47	48
10	3	30	32
10	4	34	35
10	5	28	28
10	6	63	62
10	8	41	41
10	10	10	9
10	11	36	34
10	15	28	29
10	16	15	15
11	0	12	15
11	1	15	17
11	2	27	25
11	3	30	31
11	4	10	8
11	5	40	41
11	6	38	39
11	8	11	11
11	9	14	17
11	15	19	18
12	0	9	7
12	1	26	28
12	4	19	20
12	6	17	17
12	7	21	22
12	12	22	22
13	0	22	27
13	1	13	12
13	2	16	14
13	3	29	31
13	4	9	6
	H= 2		
0	0	165	207
0	2	167	209
0	4	53	65
0	6	25	21
0	8	47	49
0	10	146	147
0	12	90	84
0	14	111	109
0	16	8	7
0	18	60	58
0	22	18	22
0	24	25	28
1	0	114	154
1	1	121	134
1	2	148	140
1	3	93	105
1	4	44	34
1	5	44	37
1	6	29	24
1	7	19	22
1	8	61	58
1	9	59	52
1	10	13	32
1	11	207	199
1	12	67	67
1	15	49	47
1	16	26	32
1	17	68	71
1	19	44	45
1	21	30	40
2	0	10	15
2	1	90	73
2	2	161	171
2	3	92	97
2	4	222	206
2	5	30	21
2	6	67	69
2	8	26	20
2	9	43	43
2	11	48	45
2	12	112	109
2	13	68	67
2	15	27	25
2	16	51	55
2	18	101	102
2	20	29	32
2	21	17	23
2	22	29	34
3	0	13	34
3	1	30	18
3	3	178	171
3	4	61	69
3	5	79	78
3	6	51	50
3	7	113	105
3	8	10	13
3	9	19	17
3	10	9	19
3	11	115	108
3	12	19	21
3	13	19	20
3	14	64	61
3	16	37	35
3	17	67	72
3	18	41	47
3	19	51	56
3	20	29	33
3	21	48	43
4	0	96	111
4	1	18	18
4	2	66	66
4	3	39	37
4	4	92	83
4	5	20	18
4	6	35	38
4	7	11	21
4	9	30	26
4	10	118	115
4	11	24	25
4	12	50	52
4	13	38	33
4	14	47	49
4	15	30	26
4	16	18	15
4	17	9	10
4	18	44	48
4	19	37	36
4	21	20	20
5	0	72	74
5	1	45	43
5	2	33	37
5	3	25	21
5	4	78	78
5	5	40	39
5	6	58	45
5	7	66	67
5	8	135	132
5	9	8	5
5	10	49	49
5	11	71	73
5	12	83	76
5	14	21	23
5	17	21	21
5	18	10	10
5	19	34	37
5	21	20	21
5	22	21	22
6	0	16	18
6	1	43	47
6	2	7	6
6	3	16	17
6	4	150	151
6	5	24	30
6	6	158	159
6	7	67	62
6	9	57	56
6	10	32	31
6	12	25	26
6	13	12	18
6	15	33	33
6	16	18	14
6	18	57	57
6	19	21	23
6	20	18	20
6	21	25	24
7	0	10	12
7	1	12	9
7	2	24	24
7	3	68	73
7	4	44	46
7	5	11	10
7	6	43	47
7	7	106	101
7	9	67	68
7	10	32	24
7	11	49	45
7	12	9	7
7	13	12	9
7	14	36	39
7	16	44	45
7	17	12	11
7	18	26	24
7	19	22	22
7	20	38	37
7	21	19	21
8	0	73	82
8	1	8	3
8	2	30	32
8	4	17	20
8	5	13	13
8	6	41	42
8	7	43	37
8	8	14	15
8	9	22	24
8	10	11	14
8	11	9	5
8	13	32	34
8	14	41	41
8	15	42	39
8	16	28	27
8	19	24	24
9	0	42	41
9	1	19	18
9	2	51	51
9	4	32	33
9	5	16	17
9	7	41	41
9	8	42	46
9	9	18	18
9	11	21	19
9	12	45	44
9	13	32	30
9	14	31	30
9	17	15	16
10	1	33	32
10	2	24	22
10	4	33	30
10	5	9	10
10	6	68	69
10	7	12	18
10	9	33	34
10	10	25	23
10	11	24	22
10	13	41	41
10	16	19	19
11	3	28	30
11	4	22	18
11	7	39	40
11	8	13	8
11	9	15	19
11	13	12	13
11	14	20	23
12	0	38	40
12	2	12	15
12	4	13	14
12	5	23	23
12	6	12	15
13	2	18	17
13	7	11	18
	H= 3		
0	0	172	182
0	2	244	240
0	4	25	29
0	6	107	99
0	8	137	135
0	10	59	56
0	12	214	206
0	16	13	11
0	18	17	17
0	20	27	27
0	24	23	24
1	0	19	9
1	1	9	22
1	2	194	166
1	3	93	99
1	4	26	17
1	5	85	79
1	6	105	95
1	7	40	46
1	9	168	158
1	10	58	53
1	11	44	44
1	13	135	133
1	14	49	49
1	15	16	22
1	17	18	15
1	19	58	56
1	20	12	18
1	23	10	12
2	1	92	86
2	2	296	287

Table A. (continued)

K	L	FO	FC
2	3	72	69
2	4	86	86
2	5	45	42
2	6	78	87
2	7	68	59
2	8	37	38
2	10	105	104
2	11	62	61
2	12	113	104
2	14	64	66
2	15	30	33
2	16	58	60
2	18	44	45
2	20	29	31
2	22	17	28
3	0	62	65
3	1	102	103
3	2	117	120
3	3	78	73
3	4	88	94
3	5	93	91
3	6	68	69
3	7	33	28
3	8	31	29
3	9	86	88
3	10	15	18
3	11	46	44
3	12	52	49
3	13	79	76
3	14	11	13
3	15	47	47
3	16	53	53
3	17	36	35
3	18	21	25
3	19	44	46
3	20	24	24
4	0	66	76
4	1	66	69
4	2	39	45
4	3	40	47
4	4	79	72
4	5	18	15
4	6	48	58
4	7	26	33
4	8	122	118
4	9	51	54
4	10	23	16
4	11	46	46
4	12	124	118
4	16	16	16
4	17	47	45
4	20	18	20
4	21	12	13
5	0	25	24
5	1	22	20
5	2	96	96

K	L	FO	FC
5	3	57	54
5	5	91	90
5	6	94	91
5	7	60	49
5	8	66	59
5	9	83	85
5	10	134	129
5	11	40	40
5	12	11	7
5	13	43	44
5	14	48	47
5	15	18	10
5	16	15	15
5	17	30	30
5	19	36	35
6	0	10	12
6	1	45	43
6	2	54	95
6	3	28	31
6	4	133	139
6	5	81	77
6	6	55	55
6	7	17	16
6	8	60	57
6	9	66	62
6	10	50	48
6	11	46	44
6	14	14	7
6	15	23	23
6	16	32	35
6	17	28	26
6	18	22	28
6	19	11	9
6	20	32	33
7	0	55	59
7	1	12	13
7	2	67	69
7	3	11	14
7	4	78	82
7	5	109	112
7	6	12	17
7	7	60	65
7	8	45	45
7	9	63	63
7	10	14	14
7	12	18	20
7	13	16	16
7	16	48	47
7	17	24	23
7	18	27	29
7	19	38	39
7	20	15	16
8	0	46	50
8	1	11	12
8	2	8	4
8	3	70	71

K	L	FO	FC
8	4	16	20
8	5	63	60
8	8	26	24
8	9	20	21
8	10	35	36
8	11	32	33
8	12	36	39
8	13	11	13
8	14	27	26
8	15	18	21
8	16	12	7
8	17	32	31
9	0	21	21
9	1	26	24
9	2	22	18
9	3	8	8
9	4	50	50
9	5	33	37
9	6	44	44
9	7	24	27
9	8	15	17
9	9	13	13
9	10	57	62
9	11	21	18
9	12	14	13
9	14	24	25
9	15	12	14
9	17	21	20
10	2	10	10
10	3	23	21
10	4	55	58
10	5	30	29
10	6	12	5
10	7	9	5
10	8	49	47
10	9	43	43
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11	2	26	28
11	4	19	25
11	5	44	43
11	6	15	13
11	7	32	33
11	10	14	17
11	12	24	23
11	13	13	13
12	0	37	43
12	1	15	14
12	3	28	27
12	5	12	10
12	7	18	17
12	8	13	12
13	0	21	22
13	1	25	26

K	L	FO	FC
13	6	18	11
	H= 4		
0	0	48	52
0	4	158	170
0	6	31	24
0	8	86	87
0	10	247	245
0	12	52	51
0	14	62	59
0	16	24	26
0	18	37	37
0	22	31	31
1	0	11	6
1	1	151	170
1	2	42	46
1	3	213	210
1	4	55	45
1	5	86	78
1	6	42	34
1	7	21	15
1	8	48	46
1	9	114	109
1	10	13	13
1	11	163	161
1	12	64	61
1	13	73	70
1	14	16	16
1	16	16	17
1	17	37	33
1	18	11	11
1	23	15	14
2	0	129	150
2	1	49	58
2	2	193	208
2	3	51	60
2	4	145	149
2	5	24	24
2	6	58	57
2	7	18	17
2	8	11	14
2	9	21	22
2	10	107	102
2	12	11	11
2	13	39	36
2	16	24	25
2	18	28	28
2	20	26	26
2	22	18	19
3	0	95	123
3	1	45	44
3	2	88	90
3	3	186	196
3	4	176	169
3	5	115	105

K	L	FO	FC
3	6	97	95
3	8	18	17
3	9	68	66
3	10	10	8
3	11	76	73
3	13	25	23
3	14	44	43
3	15	10	10
3	17	26	24
3	18	47	46
3	19	11	13
3	22	19	21
4	0	9	11
4	1	112	121
4	2	85	87
4	3	38	36
4	4	107	113
4	5	116	119
4	6	105	106
4	7	76	81
4	8	14	12
4	10	136	139
4	12	30	29
4	13	15	17
4	14	21	21
4	15	20	24
4	16	38	36
4	17	22	23
4	18	13	16
4	19	12	13
4	22	10	12
5	0	11	12
5	1	89	92
5	2	63	64
5	3	96	102
5	4	21	26
5	5	73	74
5	6	114	114
5	7	12	14
5	8	112	110
5	9	64	61
5	10	19	19
5	11	67	62
5	12	76	77
5	13	25	32
5	15	27	28
5	16	14	14
5	17	20	20
5	19	10	9
6	0	45	50
6	1	74	76
6	2	65	77
6	3	26	26
6	4	81	83
6	5	58	57
6	6	105	100

K	L	FO	FC
6	7	82	80
6	8	44	48
6	9	24	24
6	10	33	29
6	11	28	31
6	13	34	33
6	14	15	15
6	15	9	6
6	16	13	14
6	18	45	43
6	20	22	23
7	0	109	124
7	1	16	14
7	2	75	81
7	3	98	100
7	4	63	65
7	5	42	46
7	6	87	85
7	11	40	38
7	12	21	17
7	13	15	14
7	14	38	35
7	15	11	13
7	17	42	42
7	18	22	22
8	0	22	23
8	1	82	88
8	2	16	16
8	5	47	50
8	6	26	27
8	7	50	47
8	8	49	42
8	9	18	16
8	10	46	50
8	11	19	18
8	12	16	15
8	13	25	24
8	15	21	19
8	18	27	27
9	0	19	27
9	1	13	15
9	2	38	43
9	3	21	17
9	5	25	29
9	6	43	48
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9	12	43	41
9	13	12	13
9	15	13	13
10	1	31	28
10	3	11	14
10	4	17	12
10	5	26	28
10	6	45	45

K	L	FO	FC
10	7	39	39
10	8	42	39
10	9	25	22
10	10	10	9
10	11	28	30
10	12	12	9
10	13	25	26
10	14	20	17
11	0	36	41
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11	2	15	17
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11	4	19	21
11	5	32	32
11	6	16	19
11	9	25	28
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12	1	28	26
12	2	22	22
12	5	29	30
12	8	28	25
13	1	20	24
13	4	15	12
	H= 5		
0	0	39	32
0	2	156	164
0	4	112	109
0	6	103	102
0	8	66	72
0	10	95	97
0	12	74	72
0	14	73	71
0	16	42	42
0	18	18	21
0	20	25	25
0	22	20	20
1	0	19	15
1	1	172	197
1	2	21	17
1	3	25	34
1	4	28	30
1	5	112	107
1	6	7	5
1	7	54	57
1	8	51	52
1	9	50	42
1	10	43	43
1	11	108	107
1	12	33	32
1	13	42	44
1	14	31	33
1	15	10	11
1	16	22	21
1	17	33	30

K	L	FO	FC
1	20	16	17
1	21	18	20
2	0	113	146
2	1	86	91
2	2	114	126
2	3	27	33
2	4	194	188
2	5	44	48
2	6	16	18
2	7	9	8
2	9	14	15
2	10	9	12
2	11	16	16
2	12	17	28
2	13	21	19
2	16	45	41
2	18	18	28
2	20	20	19
3	0	19	25
3	1	201	220
3	2	229	231
3	4	23	37
3	5	98	98
3	6	95	96
3	7	26	22
3	9	36	42
3	10	23	27
3	11	50	49
3	12	22	28
3	14	10	4
3	15	12	18
3	16	32	38
3	21	10	12
4	0	24	29
4	1	79	78
4	2	102	118
4	3	121	131
4	4	44	35
4	5	15	12
4	6	32	31
4	7	22	22
4	8	79	82
4	10	42	43
4	12	45	44
4	14	44	45
4	15	14	14
4	16	27	29
4	18	13	18
4	21	12	13
5	0	43	45
5	1	96	101
5	2	52	55
5	3	27	35
5	4	96	95
5	5	57	54
5	6	47	43

Table A. (continued)

K	L	FO	FC
5	7	17	19
5	8	50	48
5	9	71	66
5	10	56	53
5	11	52	50
5	12	39	34
5	13	12	12
5	14	15	16
5	16	25	26
5	17	23	25
5	20	30	30
6	0	48	51
6	1	64	70
6	2	57	63
6	3	74	80
6	4	133	139
6	5	36	36
6	6	34	31
6	7	20	21
6	8	24	26
6	9	25	31
6	10	38	36
6	11	28	29
6	13	18	16
6	16	35	35
6	17	11	13
6	18	31	31
7	0	9	15
7	1	42	37
7	2	123	134
7	3	41	40
7	4	46	51
7	5	45	42
7	6	32	32
7	7	8	10
7	8	34	29
7	9	79	80
7	10	11	10
7	11	15	13
7	12	18	20
7	14	11	8
7	15	26	26
7	16	11	12
8	0	60	70
8	1	52	60
8	3	59	64
8	4	10	12
8	5	17	20
8	6	37	34
8	7	16	18
8	8	55	59
8	9	24	27
8	11	10	12
8	12	28	26
8	13	15	11
8	14	11	10

K	L	FO	FC
8	16	23	23
9	2	31	34
9	4	39	41
9	6	25	25
9	8	35	33
9	9	37	37
9	10	39	38
9	11	27	26
9	12	17	16
9	14	10	7
9	15	15	13
9	16	16	16
10	0	14	15
10	1	16	14
10	2	15	18
10	3	32	32
10	4	17	17
10	5	28	26
10	6	46	45
10	9	32	35
10	10	27	25
10	13	14	11
10	14	18	19
11	1	22	22
11	2	23	26
11	4	20	22
11	6	14	14
11	7	26	25
11	9	26	26
12	0	45	47
12	1	13	11
12	2	14	12
12	3	38	28
12	4	12	11
12	6	20	19
12	8	24	26
13	1	12	12
13	2	12	9
13	3	12	10
	H= 6		
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0	2	121	127
0	4	27	34
0	6	16	11
0	8	9	6
0	10	49	46
0	12	92	93
0	14	67	65
0	16	28	30
0	18	14	14
0	20	28	30
1	0	11	17
1	1	37	39
1	2	30	38

K	L	FO	FC
1	3	102	108
1	4	38	50
1	5	59	70
1	6	27	29
1	7	29	30
1	8	43	45
1	9	12	9
1	10	27	24
1	11	32	33
1	12	20	21
1	13	18	21
1	14	39	38
1	15	60	60
1	17	20	21
1	18	13	17
1	21	33	34
2	0	44	47
2	1	53	48
2	2	205	229
2	3	49	46
2	4	96	98
2	5	40	30
2	6	87	86
2	7	8	9
2	8	47	49
2	10	13	12
2	12	15	22
2	13	24	26
2	14	77	72
3	0	113	123
3	1	83	91
3	2	93	105
3	3	93	86
3	4	82	76
3	5	56	55
3	6	25	33
3	7	12	12
3	8	45	47
3	9	19	21
3	10	37	34
3	11	21	21
3	12	38	39
3	13	27	27
3	14	26	25
3	15	34	34
3	16	14	16
3	21	31	31
4	0	23	25
4	1	13	21
4	2	13	23
4	3	52	55
4	4	30	31
4	5	15	17
4	6	45	43
4	7	24	24
4	8	8	4

K	L	FO	FC
4	10	63	57
4	11	26	24
4	12	34	33
4	14	42	40
4	15	11	11
4	16	22	22
4	17	20	21
4	18	11	11
4	19	17	17
4	20	28	27
5	0	19	16
5	1	19	28
5	2	15	12
5	3	83	91
5	6	34	28
5	7	65	66
5	8	24	22
5	9	46	46
5	11	8	10
5	12	10	10
5	14	27	26
5	15	26	28
5	16	30	27
5	17	23	24
5	18	47	47
6	0	32	34
6	1	22	22
6	2	92	102
6	3	11	9
6	4	20	18
6	5	11	16
6	6	14	16
6	7	12	16
6	8	61	66
6	9	37	40
6	10	29	29
6	13	18	18
6	14	19	22
6	16	28	28
6	17	26	26
7	0	85	95
7	1	14	11
7	3	45	44
7	4	61	62
7	5	28	31
7	6	13	12
7	7	49	52
7	8	15	12
7	9	20	23
7	10	44	45
7	12	22	24
7	13	10	11
7	14	10	12
7	16	11	14
7	17	29	29
8	0	32	34

K	L	FO	FC
8	1	25	24
8	2	11	12
8	3	21	26
8	4	16	14
8	5	10	12
8	6	52	55
8	10	51	54
8	11	23	22
8	12	23	23
8	13	10	9
9	0	21	25
9	1	21	23
9	3	30	27
9	5	13	11
9	6	18	19
9	7	38	40
9	8	20	18
9	9	33	33
9	10	24	24
9	11	14	13
9	14	19	15
10	0	35	38
10	1	17	19
10	2	21	28
10	3	17	17
10	7	13	15
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10	10	21	19
10	11	12	12
10	12	14	11
11	0	28	32
11	2	16	19
11	3	29	27
11	4	22	20
11	5	17	17
11	7	22	24
12	0	31	35
12	1	25	26
12	2	14	10
12	5	16	17
12	6	22	21
	H= 7		
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0	2	11	5
0	4	11	17
0	6	44	44
0	8	78	74
0	10	39	36
0	12	67	73
0	14	12	10
0	16	59	55
0	18	17	16
1	0	15	28
1	1	79	94

K	L	FO	FC
1	2	45	54
1	3	68	77
1	5	82	80
1	6	54	58
1	7	17	17
1	8	24	25
1	9	34	37
1	10	14	12
1	11	19	19
1	12	29	30
1	13	63	57
1	15	62	57
1	16	19	19
1	17	14	16
1	18	10	8
1	19	12	9
1	20	20	20
2	0	137	153
2	2	34	37
2	3	91	92
2	4	38	39
2	5	10	12
2	6	86	93
2	7	13	18
2	8	20	19
2	9	24	24
2	10	62	62
2	12	56	53
2	13	24	23
2	14	39	39
2	16	44	43
2	19	11	11
2	20	17	19
3	0	30	37
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3	2	29	31
3	3	47	51
3	4	42	41
3	5	38	40
3	6	27	26
3	8	68	67
3	9	68	71
3	10	34	33
3	11	14	10
3	12	54	54
3	13	20	21
3	14	22	25
3	15	36	37
3	16	23	23
3	17	19	18
3	19	16	17
4	0	15	14
4	2	38	42
4	4	14	18
4	7	41	42
4	8	82	80

K	L	FO	FC
4	9	44	42
4	10	15	17
4	11	13	15
4	12	40	41
4	13	30	30
4	14	10	12
4	15	13	17
4	16	44	43
4	18	23	23
4	19	15	13
5	1	62	65
5	2	12	20
5	3	24	34
5	4	31	29
5	5	22	20
5	6	51	49
5	7	83	32
5	8	38	37
5	9	31	29
5	13	27	26
5	14	44	42
5	15	30	31
5	16	26	25
5	17	11	7
5	18	22	24
6	0	62	72
6	1	9	7
6	4	53	54
6	5	32	39
6	6	58	57
6	7	54	55
6	8	46	46
6	9	20	20
6	12	18	19
6	13	25	24
6	14	21	20
6	15	28	26
6	16	14	14
7	0	12	13
7	1	51	53
7	2	36	34
7	3	34	36
7	4	23	24
7	5	20	23
7	6	15	16
7	8	62	62
7	9	24	21
7	10	11	11
7	12	42	39
7	14	36	34
7	15	24	25
8	0	14	19
8	2	20	23
8	3	14	9
8	4	27	28
8	7	16	14

K	L	FO	FC
8	8	48	45
8	9	26	25
8	10	39	38
8	13	37	37
8	14	16	14
8	15	15	18
9	1	37	37
9	2	24	27
9	4	9	7
9	5	15	18
9	6	22	22
9	7	31	31
9	8	10	6
9	11	26	25
10	0	30	36
10	2	10	9
10	4	25	28
10	5	11	18
10	6	23	23
10	7	9	10
10	8	17	16
11	1	42	44
11	2	23	22
11	3	25	26
11	8	20	20
12	2	18	19
12	3	16	18
	H= 8		
0	0	134	147
0	2	33	31
0	6	111	112
0	12	9	18
0	14	83	82
1	0	39	41
1	1	25	38
1	3	43	43
1	4	74	76
1	5	12	15
1	13	83	79
1	14	25	26
1	15	10	11
1	17	13	14
1	18	15	13
2	0	43	52
2	1	27	29
2	2	63	72
2	3	19	32
2	4	69	72
2	5	27	22
2	6	58	63
2	8	87	84
2	9	14	16
2	11	36	33
2	12	61	57

Table A. (continued)

K	L	FO	FC
2	14	52	51
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3	1	37	40
3	2	30	38
3	3	24	26
3	4	29	28
3	5	33	40
3	6	63	71
3	7	89	86
3	9	22	23
3	10	78	74
3	12	16	18
3	13	43	43
3	14	37	36
3	15	12	12
3	17	18	17
4	0	62	70
4	2	21	16
4	3	24	27
4	4	12	18
4	5	45	48
4	6	87	85
4	7	14	14
4	8	18	18
4	9	46	44
4	11	22	26
4	14	53	53
4	15	24	22
4	17	11	11
4	18	15	15
5	0	54	58
5	2	37	48
5	4	58	58
5	5	25	24
5	6	10	15
5	7	47	47
5	8	35	34
5	9	38	39
5	10	18	18
5	11	12	11
5	12	20	18
5	13	39	37
5	15	11	15
5	16	32	33
6	0	13	16
6	2	59	62
6	3	43	44
6	4	46	48
6	5	36	35
6	6	34	39
6	7	14	16
6	8	23	25
6	9	37	37
6	11	9	10
6	12	21	23

K	L	FO	FC
6	14	27	26
6	15	14	14
6	16	14	16
7	1	23	25
7	2	9	6
7	4	32	36
7	5	11	10
7	6	37	34
7	7	38	39
7	8	18	20
7	10	56	56
7	11	17	18
7	12	13	14
7	13	21	23
7	14	28	27
8	0	32	37
8	3	23	22
8	4	9	5
8	5	28	26
8	6	38	37
8	8	22	22
8	9	26	28
8	10	12	12
8	11	37	39
8	12	32	30
8	14	14	15
9	0	20	21
9	1	10	8
9	2	30	34
9	4	42	45
9	5	15	14
9	8	17	16
9	9	20	20
9	10	13	14
9	11	28	27
9	12	28	21
10	1	17	14
10	2	49	51
10	3	26	26
10	4	29	30
10	5	15	16
10	7	12	9
10	9	18	11
11	0	19	20
11	1	30	32
11	3	12	11
11	5	19	19
11	6	23	23
12	0	13	18
12	1	13	16
12	2	15	16
	H= 9		
0	2	91	99
0	4	131	137

K	L	FO	FC
0	6	41	38
0	8	74	73
0	10	8	15
0	12	67	68
0	14	26	27
0	16	16	17
1	0	47	55
1	1	79	86
1	2	65	64
1	3	50	57
1	4	64	68
1	5	70	71
1	6	43	41
1	7	44	48
1	8	31	29
1	9	36	36
1	11	45	44
1	12	15	11
1	15	28	27
1	16	12	14
1	18	11	8
2	0	98	107
2	1	16	12
2	2	8	5
2	3	9	15
2	4	73	75
2	5	32	32
2	6	53	53
2	7	19	19
2	8	68	67
2	9	27	27
2	10	50	49
2	12	27	25
2	14	51	48
3	0	14	18
3	1	44	51
3	2	13	18
3	3	48	53
3	5	70	63
3	6	34	36
3	7	66	66
3	8	70	65
3	9	24	21
3	11	13	12
3	12	40	41
3	15	29	29
3	16	19	17
4	0	20	19
4	1	30	34
4	2	30	33
4	4	82	87
4	5	29	24
4	6	36	35
4	7	51	54
4	8	50	54
4	10	13	15

K	L	FO	FC
4	12	44	41
4	13	17	17
4	14	11	7
4	16	20	20
5	0	61	68
5	1	26	24
5	2	42	45
5	3	28	26
5	4	34	36
5	5	41	41
5	6	57	61
5	7	55	57
5	8	10	10
5	10	14	17
5	11	23	23
5	14	13	14
5	15	14	13
6	0	46	52
6	1	43	48
6	2	21	24
6	3	12	12
6	4	27	29
6	5	49	52
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6	7	33	33
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6	9	12	13
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6	11	14	12
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7	1	17	21
7	2	19	23
7	3	18	20
7	5	36	35
7	6	45	45
7	8	37	35
7	10	19	19
7	11	17	15
7	12	34	32
8	1	20	25
8	4	16	19
8	5	16	15
8	6	14	15
8	7	29	29
8	9	12	14
8	10	29	28
8	11	19	19
8	12	22	23
8	13	19	18
9	0	45	52
9	2	30	30
9	4	25	26
9	5	15	13
9	6	31	32

K	L	FO	FC
9	7	19	18
9	8	10	6
9	9	24	21
10	0	41	43
10	1	26	29
10	2	41	43
10	4	10	9
10	5	22	22
10	6	17	16
10	7	20	20
11	3	36	38
11	4	10	7
	H= 10		
0	0	144	155
0	2	47	56
0	4	88	88
0	6	56	56
0	8	43	39
0	10	17	11
0	12	25	26
0	14	24	21
1	0	15	17
1	1	21	20
1	2	64	68
1	4	22	12
1	5	60	59
1	6	52	50
1	9	13	12
1	10	16	15
1	13	34	32
1	14	13	14
1	16	10	11
1	17	19	16
2	0	43	53
2	1	29	31
2	3	24	29
2	5	14	19
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2	12	38	36
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3	2	14	15
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3	4	20	18
3	5	88	93
3	6	24	24
3	7	22	25
3	8	26	26
3	9	9	10
3	10	23	23
3	11	11	14
3	12	16	19
3	13	20	18

K	L	FO	FC
3	14	13	14
3	15	12	10
3	16	21	19
4	0	69	71
4	1	36	37
4	2	40	45
4	3	35	39
4	4	45	47
4	5	9	15
4	6	64	67
4	7	18	20
4	8	28	29
4	9	14	10
4	10	26	26
4	13	10	12
4	14	13	14
5	1	16	16
5	8	31	31
5	9	11	14
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5	11	15	13
5	13	10	11
5	14	9	11
6	0	10	8
6	1	25	28
6	3	51	56
6	4	29	29
6	5	8	5
6	6	45	42
6	7	35	34
6	8	12	12
6	9	8	8
6	10	9	6
6	11	18	16
6	12	26	26
7	0	20	18
7	1	26	28
7	2	22	26
7	3	23	23
7	4	39	39
7	5	17	13
7	7	17	15
7	8	27	27
7	10	18	16
7	12	11	12
7	13	19	15
8	0	8	14
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8	3	21	21
8	5	14	14
8	6	19	17
8	7	11	7
8	8	21	22
8	9	20	16
8	10	23	24
8	11	8	6

K	L	FC	FC
9	1	9	6
9	2	43	43
9	3	18	18
9	4	23	21
9	5	23	20
9	6	17	14
9	7	9	9
9	8	10	10
10	0	35	39
10	1	16	15
10	3	21	20
10	4	31	33
10	6	8	7
11	0	9	12
11	1	27	27
11	3	26	27
	H= 11		
0	0	50	54
0	2	81	82
0	4	24	29
0	6	30	29
0	8	26	26
0	12	37	34
0	14	8	6
1	0	85	90
1	1	30	31
1	2	16	15
1	3	10	9
1	4	44	41
1	6	23	26
1	8	24	24
1	9	24	24
1	10	13	12
1	11	29	27
1	12	19	17
1	14	13	13
1	15	24	21
2	0	72	71
2	1	7	8
2	2	41	42
2	3	8	7
2	4	52	54
2	5	7	9
2	7	18	20
2	10	22	21
2	11	15	15
2	12	9	10
2	13	12	12
3	2	10	7
3	3	24	24
3	7	19	17
3	8	7	8
3	9	16	13
3	11	30	28

K	L	FO	FC
3	14	28	19
3	15	16	14
4	0	18	19
4	1	12	14
4	2	16	18
4	3	27	30
4	4	50	54
4	5	15	14
4	6	39	40
4	8	11	7
4	10	11	11
4	11	14	13
4	12	25	23
4	13	9	11
4	14	9	4
5	0	29	31
5	1	7	6
5	2	10	13
5	3	30	32
5	4	53	52
5	5	14	16
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5	9	21	20
5	10	13	9
5	11	12	15
5	12	26	23
6	0	15	16
6	1	12	12
6	2	24	23
6	3	25	21
6	4	45	46
6	5	28	28
6	6	11	16
6	7	12	13
6	9	17	17
6	10	16	15
6	11	15	16
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7	6	9	10
7	10	11	11
7	11	16	16
8	2	13	13
8	4	28	28
8	6	20	20
8	8	14	15
9	0	33	33
9	1	9	4
9	3	22	22
9	4	19	20
9	7	9	7
10	1	19	17
10	2	26	26

Table A. (concluded)

K	L	FO	FC
10	3	8	5
10	4	22	24
	H= 12		
0	0	45	54
0	2	32	33
0	4	8	6
0	10	65	61
0	14	13	11
1	1	8	10
1	2	45	43
1	3	46	46
1	4	13	14
1	5	7	7
1	8	25	26
1	9	41	40
1	10	14	14
1	11	27	29
1	12	21	20
2	0	63	57
2	1	14	16
2	2	53	49
2	4	27	28
2	5	9	8
2	6	9	7
2	7	18	21
2	8	19	19
2	9	19	21
2	10	27	24
2	12	8	5
2	13	16	17
2	14	17	14
3	0	19	21
3	1	19	31
3	3	41	45
3	4	7	1
3	6	20	21
3	7	14	13
3	8	9	9
3	9	32	31
3	10	11	6
4	0	15	15
4	1	8	5
4	2	29	30
4	4	24	26
4	6	8	10
4	7	15	13
4	8	14	15
4	9	13	12
4	10	39	37
4	11	8	9
4	13	10	9
5	0	18	17
5	2	26	26
5	3	18	19

K	L	FO	FC
5	4	8	11
5	5	19	16
5	6	11	13
5	7	11	9
5	8	26	24
5	9	16	14
5	10	21	16
5	12	26	24
6	0	22	22
6	1	13	9
6	2	28	29
6	4	14	15
6	5	8	7
6	6	21	20
6	7	11	11
6	8	13	11
6	9	20	19
7	0	13	11
7	2	17	16
7	3	25	24
7	5	18	14
7	6	28	16
7	9	9	10
8	0	28	29
8	2	20	17
8	3	10	9
8	4	24	24
8	7	11	12
8	8	9	5
9	1	10	17
9	2	15	14
9	5	23	23
10	0	15	15
10	1	13	11
10	2	12	16
	H= 13		
0	0	19	14
0	2	28	19
0	4	18	18
0	6	9	2
0	8	54	51
0	10	8	8
0	12	42	39
1	0	20	15
1	1	46	47
1	2	22	21
1	3	20	18
1	4	19	19
1	5	12	13
1	7	33	31
1	9	18	19
1	10	22	21
1	11	31	28
2	0	47	45

K	L	FO	FC
2	1	13	17
2	2	36	35
2	3	10	9
2	4	28	25
2	6	24	24
2	8	24	22
2	9	14	12
2	10	23	19
2	11	13	11
3	0	20	17
3	1	67	68
3	2	14	16
3	4	23	20
3	7	32	34
3	8	24	22
3	11	23	19
4	0	26	26
4	3	23	23
4	5	21	23
4	8	46	44
4	9	18	17
5	0	11	15
5	1	23	25
5	3	16	16
5	4	12	11
5	6	21	20
5	7	19	17
5	9	14	16
5	10	32	30
6	0	7	8
6	2	16	18
6	3	18	20
6	4	30	30
6	5	23	22
6	6	14	14
6	9	24	22
7	0	24	22
7	1	12	8
7	2	16	15
7	3	19	18
7	4	36	34
8	2	23	22
8	3	21	20
8	5	12	14
9	0	13	10
	H= 14		
0	0	13	15
0	2	42	39
0	6	28	26
0	8	18	16
0	10	38	35
1	0	8	11
1	1	31	32
1	2	14	14

K	L	FO	FC
1	3	29	27
1	5	12	12
1	8	19	15
1	9	35	30
2	0	24	24
2	2	54	49
2	3	18	15
2	4	22	21
2	5	9	9
2	8	34	31
2	10	11	8
3	0	30	27
3	1	20	20
3	2	10	10
3	3	27	26
3	4	28	24
3	5	15	16
3	6	26	21
3	9	38	35
3	10	9	5
4	0	9	12
4	1	31	30
4	2	20	21
4	4	11	9
4	5	25	25
4	6	32	31
4	7	17	10
4	8	20	19
5	0	28	24
5	1	22	23
5	5	8	10
5	6	16	16
5	8	23	19
6	0	15	15
6	1	24	23
6	2	34	32
6	3	8	2
6	5	21	22
6	7	24	23
7	0	31	29
7	2	21	21
7	4	25	25
7	5	8	0
8	0	11	10
8	1	21	21
	H= 15		
0	0	58	53
0	2	16	14
0	8	12	14
1	0	10	6
1	1	32	29
1	3	27	23
1	4	9	4
1	5	10	7

K	L	FO	FC
1	6	12	10
1	7	9	12
2	0	62	52
2	1	19	16
2	4	33	30
2	6	24	22
3	1	25	24
3	2	36	35
3	3	23	18
3	4	14	11
3	5	21	15
3	6	20	16
3	7	27	23
4	0	21	15
4	1	29	30
4	2	20	16
4	3	21	15
4	4	11	10
4	6	16	16
5	0	31	27
5	2	10	8
5	3	8	8
6	0	30	27
6	1	20	17
6	3	15	14
6	4	11	8
7	1	12	11
7	2	31	27
	H= 16		
0	0	43	37
0	4	21	17
1	1	45	39
1	2	11	8
1	3	11	8
1	4	12	7
1	5	8	7
2	0	14	10
2	2	37	35
2	3	11	10
2	6	10	10
3	0	16	12
3	1	34	27
3	4	21	16
3	5	8	8
4	0	26	21
5	1	23	18
	H= 17		
0	2	16	17
0	4	21	17
2	0	24	20
2	3	9	5

K	L	FO	FC
	H= 18		
1	0	12	8

Table B. Observed (FO) and Calculated (FC) Structure Factors for $[Ni(EIA)(CH_3OH)]_4$.

K	L	FO	FC
H= 0			
0	2	271	281
0	4	98	74
0	6	92	82
0	8	17	2
0	10	30	28
0	12	21	31
0	14	95	92
1	2	68	70
1	3	61	63
1	4	24	35
1	5	47	59
1	7	73	73
1	8	58	62
1	9	152	142
1	12	40	41
1	13	47	41
2	2	187	187
2	3	122	118
2	4	183	174
2	5	53	42
2	6	60	67
2	7	20	10
2	8	67	69
2	9	17	24
2	10	51	50
2	13	72	70
2	15	47	44
3	1	82	88
3	2	13	3
3	4	12	5
3	5	104	106
3	6	32	45
3	8	142	144
3	9	28	27
3	10	69	68
3	11	20	23
3	12	35	28
4	0	174	170
4	1	94	91
4	5	80	87
4	7	33	29
4	8	38	35
4	9	83	93
4	10	21	30
4	13	38	38
4	14	34	32
4	15	24	20
5	1	97	93
5	2	20	32
5	4	117	98
5	5	78	77
5	6	69	75
5	7	32	34
5	8	53	55
5	9	97	97
5	10	19	17
5	13	21	16
6	0	264	236
6	2	48	51
6	4	95	101
6	5	28	31
6	6	25	23
6	7	26	28
6	8	47	45
6	9	40	41
6	10	28	36
6	11	41	39
7	1	63	52
7	2	46	37
7	3	70	59
7	4	28	14
7	5	80	86
7	6	30	46
7	7	52	46
7	9	85	90
7	12	21	15
8	0	221	210
8	1	39	54
8	2	22	28
8	3	110	99
8	4	17	24
8	5	26	15
8	6	65	70
8	8	62	63
8	10	44	45
8	12	36	40
8	14	33	27
9	1	31	25
9	2	83	90
9	3	36	35
9	4	87	81
9	6	41	53
9	8	102	112
9	9	38	39
9	10	59	61
9	14	35	30
10	0	70	49
10	1	121	122
10	2	67	61
10	3	33	27
10	6	71	71
10	7	111	118
10	8	69	77
10	10	56	53
10	11	52	55
10	13	58	55
11	1	15	4
11	2	43	39
11	3	87	77
11	4	38	37
11	5	133	139
11	6	64	64
11	8	75	81
11	9	64	68
11	10	33	29
11	12	36	34
12	0	203	195
12	1	109	101
12	2	21	25
12	3	36	42
12	4	73	87
12	5	106	108
12	6	59	59
12	7	119	119
12	8	42	43
12	9	103	100
12	12	38	41
12	14	36	29
13	1	89	74
13	3	14	17
13	4	32	30
13	5	71	74
13	6	55	61
13	7	19	10
13	9	97	103
13	13	40	43
14	0	173	172
14	1	40	40
14	4	138	139
14	6	129	137
14	7	53	54
14	8	111	109
14	9	21	24
14	10	62	66
14	13	24	19
15	1	39	46
15	2	74	73
15	3	32	35
15	5	16	12
15	7	27	31
15	8	63	67
15	9	36	33
15	10	22	17
15	12	34	29
15	13	38	37
16	1	59	66
16	2	65	66
16	3	89	83
16	4	40	38
16	5	101	107
16	7	82	81
16	9	92	94
16	10	19	21
16	11	45	41
17	1	45	32
17	2	19	16
17	3	50	64
17	4	61	59
17	6	21	19
17	7	31	29
17	8	47	47
17	11	31	33
17	12	34	32
17	13	23	16
18	0	116	107
18	1	68	64
18	3	40	37
18	4	46	55
18	6	17	16
18	7	30	27
18	8	47	45
18	9	19	18
18	10	39	43
18	11	39	38
19	1	22	15
19	2	64	63
19	4	40	37
19	5	28	27
19	7	24	22
19	8	24	19
19	9	20	19
19	12	28	27
20	0	84	92
20	1	44	44
20	3	33	37
20	6	20	21
20	8	25	29
20	10	20	19
21	2	42	39
21	3	33	32
21	5	43	41
21	8	23	30
21	9	40	44
21	11	28	25
22	1	33	33
22	2	46	46
22	3	21	21
22	4	20	27
22	6	36	41
22	7	34	37
23	1	41	39
23	4	59	59
23	6	32	35
23	8	34	37
24	0	19	11
24	2	38	39
24	3	47	47
24	4	33	31
24	5	54	53
24	6	34	31
24	7	30	31
24	8	23	25
24	9	31	29
25	2	24	23
25	3	35	31
25	5	57	55
25	8	23	21
26	1	62	60
26	2	28	20
26	3	52	46
26	4	60	58
26	7	31	32
27	4	24	28
27	5	21	13
27	6	28	27
28	0	84	81
28	2	70	62
28	3	21	29
28	6	22	22
30	1	60	58
30	3	21	25
H= 1			
0	1	56	55
0	2	14	5
0	3	163	139
0	4	29	26
0	5	21	40
0	7	85	96
0	8	144	145
0	9	69	63
0	10	41	44
0	11	34	32
0	12	31	36
1	1	320	322
1	2	113	113
1	3	119	107
1	4	114	95
1	5	109	106
1	6	33	40
1	7	39	36
1	8	40	45
1	9	47	46
1	10	41	37
1	12	24	25
1	13	64	62
1	14	45	49
1	15	33	31
2	0	84	75
2	1	108	102
2	2	85	84
2	3	79	72
2	4	111	114
2	6	113	105
2	7	45	46
2	8	113	115
2	9	122	121
2	10	47	43
2	11	19	14
2	12	18	19
2	13	47	44
3	0	314	333
3	1	111	112
3	2	50	52
3	3	54	61
3	4	86	90
3	5	94	99
3	6	61	62
3	7	22	14
3	8	68	68
3	9	73	76
3	10	40	43
3	11	19	21
3	12	24	29
3	14	46	45
3	15	21	23
4	0	29	23
4	1	45	49
4	2	80	77
4	3	57	49
4	4	65	68
4	5	91	92
4	6	26	31
4	7	76	79
4	8	79	80
4	9	104	99
4	10	58	65
4	12	39	35
4	13	23	21
5	1	105	99
5	2	33	37
5	3	50	52
5	4	35	42
5	5	52	55
5	6	29	35
5	7	35	30
5	8	44	53
5	9	66	64
5	10	24	23
5	13	34	32
6	0	115	125
6	1	54	48
6	2	73	73
6	3	60	55
6	4	94	89
6	5	63	73
6	6	52	52
6	7	53	44
6	8	74	78
6	9	66	72
6	10	21	17
6	11	45	42
6	12	21	23
6	14	26	20
7	0	86	74
7	1	71	53
7	2	107	99
7	3	84	85
7	4	46	50
7	5	31	27
7	6	45	37
7	7	38	37
7	8	40	40
7	9	25	25
7	10	35	38
7	11	38	34
7	12	39	37
7	13	33	31
8	0	293	265
8	1	109	109
8	2	85	74
8	3	50	54
8	4	84	87
8	5	86	73
8	6	27	27
8	8	80	80
8	9	52	53
8	10	33	36
8	13	28	31
9	0	174	177
9	1	116	119
9	2	30	29
9	3	63	72
9	4	54	60
9	6	77	80
9	7	50	48
9	8	51	50
9	9	25	31
9	10	31	30
9	11	40	36
9	12	23	33
9	13	38	34
9	14	35	33
10	0	234	224
10	1	89	85
10	2	66	73
10	3	68	63
10	4	54	52
10	5	91	101
10	6	55	62
10	7	19	15
10	8	31	35
10	9	98	99
10	10	18	17
10	11	18	10
10	14	39	35
11	0	266	268
11	1	71	72
11	2	86	84
11	4	83	89
11	5	60	65
11	6	50	47
11	7	95	99
11	8	46	53
11	9	52	54
11	10	29	26
11	11	33	34
11	12	34	34
11	13	34	31
11	14	34	32
12	0	29	60
12	1	145	143
12	2	61	62
12	3	69	61
12	4	85	86
12	5	52	47
12	6	82	82
12	7	34	46
12	8	75	79
12	9	52	52
12	10	38	38
12	12	24	22
12	13	44	45
13	0	36	44
13	1	153	146
13	3	61	68
13	4	78	74
13	5	98	101
13	6	112	113
13	7	35	35
13	8	87	89
13	9	70	71
13	10	40	42
13	13	36	36
14	0	107	107
14	1	71	69
14	2	29	35
14	3	88	79
14	4	45	48
14	5	71	69
14	6	39	44
14	7	16	13
14	8	65	65
14	9	35	33
14	10	34	38
14	12	29	29
15	0	88	94
15	1	52	56
15	2	38	37
15	4	108	109
15	5	96	98
15	6	47	50
15	7	90	88
15	8	55	56
15	9	61	62

Table B. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
15	10	53	58	23	4	44	46	1	4	115	121	5	4	90	95	9	6	51	48	13	13	29	29	19	6	52	52	26	4	40	41
16	1	52	51	23	5	20	26	1	5	144	140	5	5	72	74	9	8	79	73	14	0	103	109	19	7	19	24	26	5	23	23
16	2	91	91	23	7	48	50	1	6	121	115	5	6	41	34	9	9	51	54	14	1	45	52	19	8	40	43	26	6	23	14
16	3	43	39	23	9	21	16	1	7	141	152	5	7	102	98	9	10	32	33	14	2	44	46	19	9	31	28	26	7	23	24
16	4	58	60	24	1	25	23	1	8	94	95	5	8	47	44	9	11	19	17	14	3	61	63	19	12	26	22	27	2	24	25
16	5	33	30	24	2	18	19	1	9	118	116	5	9	88	85	9	12	25	24	14	4	65	63	20	0	29	31	27	3	33	34
16	7	37	32	24	3	33	34	1	10	47	48	5	10	32	36	9	13	58	59	14	5	129	133	20	1	31	32	27	5	33	34
16	9	39	16	24	4	45	43	1	11	56	61	5	11	45	44	9	14	22	24	14	6	52	53	20	2	18	20	27	7	23	18
16	11	22	17	24	5	47	49	1	12	32	34	6	0	21	25	10	0	109	109	14	7	44	42	20	4	34	35	28	0	37	35
16	13	40	35	24	6	37	36	1	13	42	46	6	1	70	64	10	1	142	145	14	8	56	58	20	5	23	21	28	2	20	19
17	0	149	148	24	8	22	18	1	14	22	23	6	2	34	38	10	2	52	55	14	9	31	34	20	6	35	38	28	3	36	37
17	1	18	20	24	9	34	34	2	0	184	194	6	3	40	33	10	3	57	66	14	10	24	22	20	9	19	19	28	5	37	32
17	2	31	24	25	0	40	40	2	1	62	61	6	4	67	57	10	4	36	32	14	11	23	19	21	0	30	27	29	3	25	17
17	3	62	58	25	2	27	23	2	2	38	39	6	5	42	36	10	5	66	62	14	12	30	25	21	1	45	47	29	4	22	20
17	4	43	37	25	3	67	68	2	3	85	84	6	6	69	68	10	6	29	21	15	0	27	28	21	2	53	53	30	1	23	23
17	5	45	45	25	4	32	30	2	4	215	208	6	7	20	21	10	8	64	67	15	1	75	76	21	3	18	16				
17	6	37	40	25	5	28	27	2	5	106	92	6	8	20	19	10	9	18	12	15	2	47	49	21	4	26	29		H=	3	
17	7	35	31	25	6	47	43	2	6	118	123	6	9	40	40	10	11	26	28	15	3	120	120	21	5	41	39				
17	8	25	25	25	8	26	26	2	7	36	48	6	10	31	29	10	12	27	28	15	4	61	60	21	6	20	22	0	1	148	142
17	9	56	54	26	4	35	33	2	8	44	46	6	11	26	28	10	13	46	45	15	5	32	30	21	7	48	50	0	2	196	183
17	10	20	21	26	5	22	24	2	9	89	84	6	12	23	25	11	0	303	301	15	6	29	28	21	8	30	27	0	3	60	49
17	11	42	40	26	7	21	15	2	10	45	45	6	13	23	25	11	1	31	40	15	8	50	44	21	9	28	32	0	4	136	144
18	2	68	75	26	8	33	35	2	11	19	16	7	0	183	179	11	2	136	145	15	9	47	49	22	0	59	60	0	5	63	73
18	3	52	51	27	0	33	30	2	13	43	39	7	1	76	74	11	3	24	25	15	10	24	20	22	1	41	44	0	6	166	154
18	5	36	34	27	1	55	52	2	14	31	36	7	2	53	47	11	4	64	68	15	11	21	18	22	2	25	28	0	7	178	179
18	7	40	49	27	2	54	51	3	0	17	9	7	3	116	116	11	5	46	45	16	0	84	77	22	7	21	20	0	8	32	25
18	8	35	37	27	4	41	44	3	1	19	18	7	4	65	65	11	6	44	38	16	1	68	68	22	8	24	23	0	9	65	77
18	9	39	35	27	5	25	26	3	2	50	45	7	5	81	80	11	7	21	23	16	2	44	44	23	0	59	60	0	10	31	31
18	12	38	34	28	5	26	28	3	3	58	53	7	6	30	36	11	8	53	49	16	4	100	96	23	1	24	22	0	11	54	59
19	0	26	32	29	0	54	51	3	4	126	141	7	7	39	39	11	9	28	24	16	5	43	38	23	2	20	19	0	13	69	71
19	1	62	66	29	1	40	36	3	5	37	35	7	8	52	50	11	10	29	30	16	6	53	58	23	3	21	23	0	15	21	20
19	8	36	37	29	2	24	30	3	6	136	132	7	9	79	84	11	13	31	34	16	8	23	23	23	4	37	37	1	0	50	47
19	10	28	25	29	3	30	30	3	7	56	62	7	10	44	49	11	14	41	42	16	9	29	28	23	5	41	42	1	1	73	71
20	0	23	23					3	8	135	130	7	11	30	31	12	0	166	173	16	10	25	20	23	6	37	40	1	2	39	36
20	1	56	50		H=	2		3	9	30	33	7	13	25	25	12	1	85	73	16	13	25	25	23	7	24	25	1	3	78	85
20	2	27	22					3	10	81	82	7	14	31	31	12	2	82	71	17	0	66	69	23	8	32	30	1	4	199	206
20	3	37	37	0	0	109	123	3	12	37	36	8	0	105	113	12	3	43	46	17	2	106	101	23	9	38	35	1	5	168	160
20	4	34	31	0	1	66	62	3	13	36	28	8	1	90	82	12	4	115	115	17	3	28	30	23	10	21	20	1	6	43	38
20	6	35	39	0	2	51	27	4	0	47	42	8	2	108	98	12	5	68	73	17	4	49	51	24	1	44	43	1	8	65	62
20	7	20	21	0	3	221	199	4	1	121	114	8	3	27	37	12	6	58	48	17	7	28	28	24	3	40	40	1	9	58	56
20	8	50	50	0	4	134	133	4	2	56	44	8	4	27	24	12	7	31	34	17	8	47	43	24	4	22	24	1	10	56	56
20	11	24	25	0	5	189	201	4	3	49	50	8	5	35	31	12	9	68	70	17	12	25	22	24	5	28	30	1	11	26	28
21	0	35	38	0	6	68	66	4	4	72	71	8	6	32	29	12	10	23	21	18	0	50	55	24	6	26	22	2	0	15	34
21	2	21	26	0	7	30	30	4	5	135	121	8	7	39	39	12	11	19	16	18	1	40	49	24	7	19	18	2	1	39	38
21	6	24	27	0	8	40	39	4	6	39	34	8	8	36	35	12	12	40	37	18	2	30	21	24	8	21	23	2	2	68	54
21	9	19	18	0	9	75	74	4	7	33	38	8	9	42	35	12	13	21	14	18	3	42	38	25	0	35	33	2	3	142	154
22	0	54	54	0	10	50	49	4	8	69	78	8	11	19	20	12	14	23	20	18	5	59	61	25	2	29	26	2	4	37	19
22	1	23	26	0	11	50	54	4	9	55	53	8	12	35	37	13	0	33	37	18	8	27	28	25	3	20	18	2	5	232	215
22	2	46	46	0	12	27	29	4	10	22	18	8	13	25	25	13	1	138	131	18	9	25	23	25	4	57	53	2	6	118	114
22	4	24	24	0	13	22	20	4	11	31	24	8	14	26	29	13	2	90	40	18	11	22	20	25	5	34	31	2	7	22	29
22	5	56	54	0	14	42	43	4	12	42	35	9	0	70	64	13	3	77	80	18	12	24	18	25	6	31	26	2	8	119	118
22	6	31	24	0	15	23	24	4	13	26	27	9	1	220	218	13	4	94	93	19	0	47	53	25	8	37	38	2	9	64	58
22	7	28	30	1	0	113	119	5	0	31	23	9	2	46	42	13	5	39	35	19	1	62	60	26	0	40	43	2	10	39	47
22	8	38	38	1	1	86	75	5	1	27	13	9	3	36	30	13	7	25	27	19	2	46	47	26	1	29	25	2	11	25	29
23	0	42	45	1	2	61	56	5	2	77	72	9	4	73	81	13	8	31	35	19	3	55	55	26	2	36	36	2	12	55	55
23	1	24	27	1	3	117	113	5	3	77	80	9	5	24	19	13	9	75	71	19	5	21	25	26	3	24	26	2	14	37	41

Table B. (continued)

K	L	FO	FC
3	0	48	35
3	1	94	94
3	2	17	8
3	3	59	63
3	4	97	92
3	5	138	136
3	6	63	61
3	9	75	77
3	10	17	16
3	11	18	10
3	12	38	40
3	14	23	19
3	15	21	21
4	0	46	51
4	1	149	137
4	2	18	6
4	3	59	68
4	4	147	191
4	4	142	191
4	5	20	18
4	6	58	52
4	7	90	87
4	8	26	31
4	9	55	58
4	10	67	65
4	11	25	27
4	12	25	25
4	13	24	14
5	0	169	161
5	1	73	63
5	2	93	87
5	3	46	39
5	4	79	86
5	5	93	82
5	6	21	23
5	7	38	35
5	8	52	45
5	9	40	36
5	11	42	44
5	12	29	29
5	13	38	32
5	14	24	23
6	0	74	78
6	1	41	41
6	2	29	37
6	3	101	105
6	4	38	43
6	5	58	56
6	7	34	44
6	8	49	46
6	9	72	61
6	10	17	17
6	11	24	28
6	12	13	20
6	13	28	23
6	14	34	33

K	L	FO	FC
7	0	28	38
7	1	52	53
7	2	76	74
7	4	30	32
7	5	73	69
7	6	33	33
7	7	53	59
7	8	79	73
7	9	27	25
7	12	42	44
7	13	22	24
7	14	23	18
8	0	34	55
8	1	104	99
8	3	55	51
8	4	73	71
8	5	31	38
8	6	20	23
8	7	31	30
8	8	57	56
8	10	70	70
8	11	31	38
8	13	55	56
9	0	54	56
9	1	67	73
9	2	25	24
9	3	74	66
9	4	59	53
9	5	50	56
9	6	77	79
9	7	53	55
9	8	54	54
9	9	53	52
9	10	37	38
9	11	24	22
9	13	28	29
9	14	26	23
10	0	172	180
10	1	98	98
10	2	90	84
10	3	14	12
10	4	53	52
10	6	42	46
10	7	31	36
10	8	46	42
10	9	53	46
10	10	26	22
10	12	57	51
10	13	29	28
10	14	51	49
11	0	168	166
11	1	22	28
11	2	77	83
11	3	67	75
11	4	28	31
11	5	137	135

K	L	FO	FC
11	6	44	47
11	7	60	67
11	8	55	53
11	9	63	60
11	11	22	24
11	12	30	31
11	14	22	17
12	0	44	54
12	1	137	143
12	2	75	81
12	3	74	75
12	4	64	87
12	5	55	55
12	6	28	32
12	7	41	33
12	8	37	32
12	9	56	48
12	11	24	21
12	13	41	38
13	0	49	55
13	1	93	102
13	2	20	22
13	3	73	70
13	4	113	119
13	5	58	59
13	6	75	76
13	8	67	64
13	10	51	50
13	11	38	35
13	13	21	21
14	0	29	40
14	1	54	60
14	2	72	75
14	3	119	124
14	4	71	75
14	5	65	63
14	6	48	47
14	8	65	60
14	10	34	37
14	12	20	19
15	0	22	22
15	1	35	34
15	2	26	28
15	3	32	34
15	4	84	84
15	5	82	82
15	6	44	46
15	8	38	38
15	9	43	39
15	10	27	26
15	11	46	41
15	12	25	23
15	13	25	20
16	0	49	58
16	1	53	50
16	2	96	100

K	L	FO	FC
16	3	83	86
16	4	110	110
16	5	53	51
16	7	21	19
16	9	35	37
16	10	28	27
16	11	26	26
17	0	51	56
17	2	38	36
17	3	45	52
17	4	41	45
17	5	73	75
17	6	30	25
17	7	43	39
17	9	43	47
18	0	82	79
18	1	45	43
18	2	56	58
18	3	80	85
18	4	32	39
18	5	20	21
18	6	29	25
18	7	26	23
18	8	20	17
18	9	20	13
18	12	34	31
19	0	28	31
19	1	28	25
19	3	18	10
19	4	58	66
19	5	23	22
19	6	48	49
19	7	18	20
19	8	40	37
20	1	63	65
20	2	24	28
20	5	28	30
20	6	39	37
20	7	27	25
20	8	32	35
21	0	43	46
21	1	35	39
21	2	21	21
21	5	40	44
21	8	25	24
21	9	38	35
22	0	77	85
22	2	27	22
22	4	22	19
22	5	43	44
22	7	42	36
22	8	20	19
22	9	32	31
22	10	22	19
23	0	49	54
23	1	43	44

K	L	FO	FC
23	2	36	32
23	5	22	23
23	6	22	20
23	8	21	22
24	1	39	40
24	3	30	32
24	4	57	55
24	6	40	39
24	8	26	23
24	9	28	27
25	0	37	39
25	1	53	52
25	2	30	35
25	3	20	25
25	8	24	20
26	3	53	51
26	4	19	15
26	5	39	35
27	0	29	30
27	1	26	27
27	2	22	22
27	3	27	24
27	4	33	31
28	2	37	36
28	4	31	33
29	2	36	32

H= 4

K	L	FO	FC
0	0	72	72
0	1	111	116
0	2	29	30
0	3	103	104
0	4	64	73
0	5	159	149
0	6	76	73
0	7	37	37
0	9	64	84
0	10	19	20
0	11	26	27
1	0	129	131
1	1	66	65
1	2	87	84
1	3	178	167
1	4	172	163
1	5	17	11
1	6	48	53
1	7	26	19
1	8	33	36
1	10	43	43
1	11	49	50
1	12	44	41
1	13	23	27
1	14	38	38
2	0	63	57
2	1	92	95

K	L	FO	FC
2	2	112	100
2	3	113	107
2	4	146	148
2	5	142	148
2	6	53	43
2	8	64	52
2	9	46	45
2	10	37	39
2	11	20	21
2	12	24	21
2	14	29	20
3	0	32	35
3	1	56	45
3	2	72	70
3	3	120	119
3	4	109	103
3	5	146	102
3	6	41	48
3	7	37	35
3	8	35	42
3	10	45	41
3	11	29	26
3	12	26	29
3	13	43	44
4	0	62	71
4	1	156	145
4	2	88	85
4	3	162	167
4	4	126	128
4	5	90	83
4	6	48	47
4	7	16	20
4	8	58	51
4	9	23	22
4	10	23	25
4	11	50	51
4	13	34	37
6	0	14	127
4	5	91	83
4	6	51	47
4	7	20	20
4	8	59	51
4	9	25	22
4	10	23	25
4	11	47	51
4	13	33	37
5	5	56	56
5	6	47	44
5	7	24	26
5	8	27	24
5	9	46	44
5	10	39	32
5	11	43	34
5	13	24	24
5	14	24	23
6	5	120	121

K	L	FO	FC
6	7	67	72
6	8	37	41
6	9	49	49
6	10	36	35
6	11	30	31
6	12	31	37
6	14	34	26
7	5	85	84
7	6	15	18
7	7	56	55
7	9	24	25
7	10	44	43
7	11	29	25
7	12	35	32
7	13	25	23
7	14	29	28
8	5	67	67
8	6	114	113
8	7	41	41
8	8	83	79
8	9	46	52
8	10	35	39
8	12	36	35
9	5	45	43
9	6	54	52
9	7	36	27
9	8	33	36
9	9	43	38
9	10	31	29
9	12	23	29
9	13	43	43
9	14	23	28
10	5	93	96
10	6	69	68
10	7	104	105
10	8	77	73
10	9	55	60
10	10	37	40
10	11	31	31
11	5	81	81
11	6	50	50
11	7	42	41
11	8	29	28
11	9	39	35
11	10	27	22
11	11	25	28
11	12	33	30
11	13	42	43
12	5	119	124
12	6	79	86
12	7	43	44
12	8	76	74
12	9	71	68
12	10	20	26
12	11	43	43
12	13	26	27

K	L	FO	FC
13	5	40	43
13	6	24	22
13	7	29	31
13	8	34	31
13	10	35	35
13	11	35	31
13	12	40	38
14	5	77	78
14	6	51	48
14	7	35	36
14	8	48	42
14	9	64	65
14	10	58	56
14	12	48	46
15	5	59	60
15	6	35	40
15	7	28	29
15	9	29	27
15	10	32	30
15	11	34	31
15	12	31	25
16	6	36	34
16	7	20	25
16	8	62	58
16	9	43	45
16	10	29	29
16	11	48	48
17	5	38	33
17	7	22	19
17	8	20	15
17	10	37	33
17	11	31	28
18	5	61	63
18	7	53	51
18	8	20	22
18	9	35	39
18	10	41	37
19	6	33	31
19	11	21	15
20	5	23	25
20	6	56	55
20	8	48	45
20	9	42	37
20	10	21	20
21	5	23	23
21	7	23	17
22	5	35	32
22	7	32	29
22	8	49	44
22	9	20	23
23	5	24	26
23	6	24	22
23	9	22	23
24	6	22	14
24	7	22	19
25	5	30	29

Table B. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
25	7	22	22	4	0	58	62	8	12	26	27	13	12	27	25	20	6	21	24	1	0	115	108	5	4	40	41	9	12	30	28
25	8	23	16	4	1	27	34	9	0	21	11	14	1	112	117	20	8	19	16	1	1	59	67	5	5	47	47	10	0	30	29
26	5	32	30	4	2	89	82	9	1	48	41	14	2	53	53	21	0	63	65	1	2	36	41	5	6	29	33	10	1	79	80
27	6	25	19	4	3	77	70	9	2	16	10	14	3	24	21	21	1	41	37	1	3	70	65	5	7	43	42	10	2	49	54
				4	4	65	66	9	3	117	117	14	4	45	41	21	2	50	49	1	4	98	107	5	9	41	42	10	3	54	51
H= 5				4	5	55	54	9	4	28	30	14	5	22	26	21	4	45	45	1	5	69	67	5	10	23	24	10	4	126	124
				4	6	31	37	9	5	134	130	14	6	23	29	21	5	33	30	1	6	90	89	5	11	60	61	10	5	44	50
0	1	118	127	4	7	18	17	9	6	107	104	14	10	30	35	21	6	41	43	1	7	79	71	5	12	34	40	10	7	38	39
0	2	137	135	4	9	16	10	9	7	35	34	14	12	40	42	21	7	33	35	1	8	52	53	5	13	36	37	10	8	27	35
0	3	67	66	4	10	35	35	9	8	72	70	15	1	44	44	21	8	40	36	1	9	41	43	5	14	33	29	10	10	35	33
0	4	108	101	4	11	27	24	9	9	46	48	15	2	27	24	21	9	28	28	1	10	34	32	6	0	31	42	10	11	20	20
0	5	150	151	4	12	56	53	9	10	18	16	15	3	33	29	21	10	25	25	1	11	37	34	6	1	23	30	10	13	21	25
0	7	51	45	4	14	35	34	9	11	33	29	15	4	53	54	22	0	52	45	1	14	25	23	6	2	56	54	11	0	31	39
0	8	40	36	5	0	68	79	10	0	30	23	15	5	19	22	22	2	27	29	2	0	75	72	6	3	113	104	11	1	61	59
0	9	42	42	5	1	19	18	10	1	34	39	15	7	34	35	22	3	19	17	2	1	63	63	6	4	96	99	11	2	104	98
0	11	39	31	5	2	100	105	10	2	24	22	15	8	21	27	22	4	19	19	2	2	22	23	6	5	107	110	11	3	30	29
0	12	46	50	5	3	111	123	10	3	55	60	15	9	39	42	22	5	32	30	2	3	72	74	6	6	45	44	11	4	76	82
0	13	32	35	5	4	99	95	10	4	121	127	15	10	59	58	22	9	22	23	2	4	17	24	6	7	28	27	11	5	80	84
1	0	39	52	5	5	86	87	10	5	31	33	15	11	30	28	23	0	31	33	2	5	48	48	6	9	47	53	11	6	26	27
1	1	127	115	5	6	27	31	10	6	69	65	16	0	130	128	23	1	27	30	2	6	16	9	6	10	46	52	11	7	25	24
1	2	126	113	5	8	53	60	10	7	29	29	16	1	40	42	23	2	43	42	2	7	66	69	6	11	21	16	11	8	23	25
1	4	100	102	5	9	63	63	10	8	21	19	16	2	57	63	23	3	23	26	2	8	30	39	7	0	28	27	11	9	26	28
1	5	57	59	5	10	26	23	10	9	24	23	16	3	58	59	23	4	32	32	2	9	31	34	7	1	59	57	11	12	24	25
1	6	62	61	5	11	53	54	10	10	24	26	16	5	22	23	23	5	48	46	2	10	25	28	7	2	67	65	11	13	23	19
1	7	49	46	5	12	24	25	10	12	26	25	16	7	33	36	23	7	38	35	2	11	19	18	7	3	72	67	12	0	85	80
1	8	64	63	5	13	22	18	11	1	42	43	16	11	43	38	24	0	50	54	2	12	29	30	7	4	53	55	12	2	29	28
1	11	26	23	6	0	18	13	11	2	23	22	16	12	29	25	24	4	36	33	2	13	23	22	7	5	69	70	12	3	84	79
1	12	39	42	6	1	28	27	11	3	46	49	17	1	20	21	25	1	32	29	2	14	25	22	7	6	21	22	12	4	26	21
1	13	29	29	6	2	48	50	11	4	93	90	17	2	51	49	25	3	40	41	3	1	54	54	7	7	46	50	12	5	67	73
1	14	29	32	6	3	76	74	11	5	101	99	17	3	58	60	25	4	27	27	3	2	103	101	7	8	27	24	12	6	39	38
2	0	56	54	6	4	56	61	11	6	59	61	17	4	25	25	26	1	30	29	3	4	55	56	7	9	26	24	12	8	23	25
2	1	64	67	6	5	59	59	11	7	91	88	17	5	49	50	26	2	20	22	3	5	78	82	7	10	38	37	12	9	35	37
2	2	64	65	6	6	24	18	11	8	34	34	17	6	22	19	26	3	29	29	3	6	58	59	7	11	26	29	12	10	24	25
2	3	150	141	6	7	20	26	11	9	65	70	17	7	32	37	26	5	21	25	3	7	65	60	7	12	36	34	13	0	88	88
2	4	93	94	6	11	24	26	11	11	22	19	17	9	54	54	26	6	35	28	3	8	69	68	7	13	27	24	13	1	103	102
2	5	52	61	6	12	24	18	11	13	29	26	17	10	27	28	27	2	29	28	3	9	27	37	8	0	50	49	13	2	49	53
2	6	81	81	6	13	42	41	12	0	82	85	17	11	26	30	27	4	26	23	3	10	39	42	8	2	66	68	13	3	74	73
2	7	25	32	7	0	38	41	12	1	35	33	18	0	45	45	27	5	24	18	3	12	56	59	8	3	106	105	13	4	36	34
2	8	34	38	7	1	59	53	12	2	91	95	18	1	77	79	28	0	28	23	3	13	35	35	8	4	93	82	13	7	19	21
2	10	41	42	7	2	60	67	12	3	87	86	18	2	63	67					4	0	17	25	8	5	78	75	13	11	32	34
2	11	55	53	7	3	70	78	12	4	26	33	18	3	37	38	H= 6				4	1	56	47	8	6	80	81	13	12	30	28
2	13	36	38	7	4	135	137	12	5	77	75	18	4	48	42					4	2	75	88	8	7	26	29	14	0	26	21
3	0	26	31	7	5	30	35	12	10	22	17	18	7	27	26	0	0	28	25	4	3	91	99	8	8	25	25	14	1	24	20
3	1	94	92	7	6	63	62	12	11	44	44	19	1	64	62	0	1	35	25	4	4	82	72	8	9	31	36	14	2	19	13
3	2	68	72	7	7	77	73	12	13	28	28	19	3	37	37	0	2	26	25	4	5	28	32	8	10	33	30	14	3	33	30
3	3	138	139	7	8	63	70	13	0	23	22	19	4	51	48	0	3	22	15	4	6	39	50	8	11	35	32	14	4	55	56
3	4	66	64	7	10	54	54	13	1	30	28	19	5	47	52	0	5	58	66	4	7	37	40	8	12	26	27	14	5	16	9
3	5	116	115	7	12	28	27	13	2	31	27	19	6	47	48	0	6	56	54	4	8	41	51	9	1	38	39	14	6	24	32
3	6	38	44	8	0	19	14	13	3	52	59	19	7	29	28	0	7	51	48	4	9	22	25	9	2	67	60	14	7	30	28
3	7	54	47	8	1	28	36	13	4	66	67	19	8	45	46	0	8	38	41	4	10	45	44	9	3	78	71	14	9	35	39
3	8	25	13	8	2	36	29	13	5	25	24	19	9	30	28	0	9	20	16	4	11	55	55	9	4	94	92	14	10	38	39
3	9	33	35	8	3	36	37	13	6	38	42	19	10	35	34	0	10	22	24	4	13	21	19	9	5	58	65	15	0	90	90
3	10	62	61	8	4	65	63	13	8	81	85	20	0	43	32	0	11	23	24	5	0	112	109	9	6	63	64	15	1	77	74
3	11	25	28	8	5	69	86	13	9	27	32	20	1	38	47	0	12	29	25	5	1	63	63	9	8	20	27	15	2	59	61
3	12	26	33	8	7	18	18	13	10	41	45	20	3	51	43	0	13	32	[illegible]	5	2	67	74	9	10	29	28	15	3	52	54
3	13	35	33	8	9	35	38	13	11	36	36	20	5	32	29	0	14	22	[illegible]	5	3	25	29	9	11	25	23	15	5	18	9

Table B. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
15	6	23	31	23	0	21	24	3	6	56	61	8	2	37	30	13	8	19	18	22	2	28	25	4	2	102	102	8	12	20	18
15	8	24	23	23	1	29	23	3	7	22	24	8	3	89	88	13	10	23	24	22	3	20	19	4	3	36	36	9	0	23	19
15	11	29	22	23	2	27	24	3	9	62	64	8	4	16	21	14	0	20	24	22	4	34	32	4	4	34	35	9	1	24	27
15	12	37	38	23	5	21	23	3	10	38	42	8	5	74	75	14	1	87	84	22	5	24	24	4	5	27	27	9	2	58	62
16	0	33	35	23	6	20	16	3	12	26	30	8	6	27	32	14	2	36	34	22	6	32	27	4	6	34	38	9	4	43	43
16	1	33	35	23	8	25	22	4	0	85	93	8	7	49	47	14	3	44	42	23	0	32	33	4	8	45	43	9	5	21	20
16	2	27	26	24	2	26	23	4	1	64	63	8	8	25	26	14	4	20	14	23	1	23	17	4	10	34	32	9	6	40	38
16	3	66	67	24	3	27	27	4	2	82	82	8	10	44	47	14	6	35	34	23	3	49	46	4	12	22	25	9	7	44	52
16	5	27	25	24	4	52	47	4	3	26	33	8	11	27	25	14	7	28	31	23	5	44	44	5	0	79	80	9	8	42	44
16	6	18	18	24	5	22	23	4	4	47	43	8	12	42	39	14	11	32	14	24	0	39	38	5	1	20	21	9	11	24	24
16	8	24	30	25	0	21	19	4	5	63	64	9	0	96	88	15	1	42	43	24	2	28	32	5	2	100	97	9	12	39	40
16	9	37	35	25	1	38	37	4	6	19	23	9	1	36	33	15	2	33	35	25	1	25	26	5	3	28	26	10	0	79	78
16	11	35	34	25	5	24	20	4	7	42	44	9	3	102	104	15	3	24	23	25	2	21	20	5	4	29	33	10	1	34	39
17	0	76	72	25	6	21	27	4	8	38	37	9	4	53	57	15	4	22	20	25	4	26	28	5	5	49	48	10	2	57	58
17	1	59	60	26	3	28	25	4	9	43	47	9	5	64	64	15	6	37	37	27	0	30	24	5	6	33	31	10	3	70	73
17	2	67	65	27	0	39	37	4	10	53	53	9	7	20	13	15	8	21	16					5	7	28	28	10	4	31	36
17	4	32	32					4	11	26	25	9	9	39	39	16	0	70	76		H=	8		5	8	29	30	10	5	24	20
17	5	33	35		H=	7		4	12	57	59	9	10	38	41	16	1	32	25					5	9	33	32	10	6	27	24
17	7	25	24					5	0	57	67	9	11	29	35	16	2	41	44	0	1	57	50	5	10	36	35	10	7	33	33
17	11	20	18	0	1	75	80	5	1	61	64	10	0	21	21	16	3	18	20	0	2	90	87	5	11	40	38	10	9	44	41
18	1	38	38	0	2	24	22	5	2	24	25	10	1	61	62	16	5	46	49	0	3	29	38	5	12	35	31	10	10	35	30
18	2	66	66	0	3	44	37	5	3	114	109	10	2	55	58	16	6	29	31	0	4	123	123	6	0	104	112	10	11	23	26
18	4	56	60	0	4	54	46	5	4	38	44	10	3	48	49	16	7	31	34	0	10	22	18	6	1	83	85	11	0	31	28
18	5	41	37	0	5	80	80	5	5	84	84	10	4	88	86	16	9	28	30	1	0	44	45	6	2	67	67	11	1	38	39
18	7	41	40	0	6	49	56	5	7	34	43	10	5	29	29	17	0	32	40	1	2	18	7	6	3	53	56	11	3	26	30
18	8	32	28	0	7	93	100	5	8	41	44	10	6	63	67	17	1	29	30	1	3	23	23	6	4	51	58	11	5	43	48
18	10	37	33	0	8	17	25	5	9	27	31	10	7	34	36	17	2	24	28	1	4	54	52	6	5	41	42	11	6	49	46
19	0	28	22	0	9	45	43	5	10	35	35	10	8	33	35	17	3	30	27	1	5	80	79	6	7	40	38	11	7	41	44
19	1	41	39	0	12	23	26	5	11	39	36	10	9	37	39	17	6	37	37	1	6	45	52	6	9	45	46	11	8	33	39
19	3	45	45	1	1	18	24	5	13	21	18	10	11	33	35	17	7	23	31	1	7	45	49	6	10	32	30	11	9	27	22
19	4	37	39	1	2	77	73	6	0	35	35	11	0	34	32	18	1	37	38	1	8	24	29	6	11	30	34	11	11	33	29
19	5	41	33	1	3	79	72	6	1	89	90	11	1	45	50	18	2	22	24	1	9	55	48	6	12	22	18	12	0	32	31
19	6	30	29	1	4	52	55	6	2	98	96	11	2	56	57	18	4	55	59	2	0	68	78	7	0	22	20	12	1	32	33
19	7	33	28	1	6	35	33	6	3	53	53	11	3	65	59	18	6	50	53	2	1	71	76	7	1	56	59	12	2	23	23
19	8	21	20	1	7	22	29	6	4	35	34	11	4	64	62	18	7	25	22	2	2	34	32	7	2	26	29	12	4	61	67
19	10	23	21	1	8	41	42	6	5	36	40	11	5	43	51	18	8	31	36	2	3	129	127	7	3	72	71	12	5	38	37
20	0	27	33	1	11	22	18	6	6	31	31	11	6	35	36	19	1	23	26	2	4	17	14	7	4	28	19	12	6	30	26
20	1	22	24	1	13	22	22	6	7	16	14	11	9	30	34	19	2	23	27	2	5	17	15	7	5	24	25	12	7	22	26
20	2	21	17	2	0	64	67	6	8	21	30	11	10	26	28	19	3	57	59	2	6	28	26	7	6	43	43	12	8	20	22
20	3	43	44	2	1	58	61	6	9	49	48	11	11	25	20	19	5	47	45	2	8	19	15	7	7	36	38	12	9	34	37
20	4	29	30	2	2	33	32	6	10	21	19	12	0	96	97	19	6	20	19	2	9	19	22	7	8	19	23	12	10	39	37
20	5	44	45	2	3	32	28	6	11	63	62	12	1	20	21	19	7	25	28	2	11	26	24	7	9	32	28	12	11	21	22
20	6	49	46	2	4	74	73	6	12	35	36	12	2	93	92	19	8	26	23	3	0	19	26	7	10	34	35	13	0	37	40
20	8	22	19	2	5	58	61	6	13	34	36	12	3	28	31	20	1	32	35	3	1	61	61	7	11	46	43	13	1	31	33
20	9	32	26	2	6	87	91	7	0	21	20	12	4	25	17	20	2	25	26	3	2	27	32	7	12	26	18	13	2	44	47
21	2	22	24	2	8	55	63	7	1	61	70	12	5	47	52	20	3	49	46	3	3	70	67	8	0	42	48	13	5	48	47
21	3	33	32	2	10	30	28	7	2	102	95	12	7	50	47	20	5	62	61	3	4	77	76	8	1	98	98	13	6	32	38
21	4	30	28	2	11	37	41	7	3	48	44	12	8	28	36	20	7	40	37	3	5	20	12	8	2	54	63	13	9	34	34
21	5	32	37	2	12	23	21	7	4	129	128	12	9	24	24	20	8	34	35	3	6	42	49	8	3	58	59	13	10	20	21
21	8	25	25	2	13	27	29	7	6	19	22	12	12	40	39	21	0	26	24	3	7	38	46	8	4	66	69	14	0	55	58
21	9	30	27	3	0	33	27	7	9	23	20	13	1	35	35	21	1	21	23	3	8	32	31	8	5	32	35	14	1	26	24
22	3	32	31	3	1	63	66	7	10	43	43	13	2	22	18	21	2	42	47	3	10	28	30	8	6	26	31	14	3	33	36
22	4	30	31	3	2	79	76	7	11	26	23	13	3	46	46	21	4	61	61	3	11	32	33	8	8	34	35	14	6	46	52
22	5	47	43	3	3	21	26	7	12	26	24	13	4	22	31	21	6	32	31	3	12	31	34	8	9	38	37	14	7	28	24
22	6	32	31	3	4	74	75	8	0	42	42	13	5	19	20	22	0	28	28	4	0	54	55	8	10	42	44	14	8	52	50
22	7	39	39	3	5	28	29	8	1	73	71	13	7	34	32	22	1	31	32	4	1	84	85	8	11	32	28	14	9	23	23

Table B. (continued)

K	L	FO	FC
15	0	28	31
15	1	23	27
15	2	42	41
15	3	29	26
15	4	36	38
15	5	29	27
15	6	28	29
15	8	25	26
16	2	38	34
16	3	22	23
16	5	42	40
16	6	33	32
16	7	55	54
16	9	32	32
17	0	32	34
17	1	33	32
17	2	29	26
17	3	24	26
17	4	39	42
17	5	31	30
17	7	36	38
17	9	27	16
18	2	44	45
18	5	30	26
18	6	38	40
18	7	28	27
18	8	39	39
18	9	23	21
19	1	23	16
19	3	27	29
19	4	27	23
19	5	48	53
19	6	44	44
19	7	26	22
19	8	29	25
20	0	22	23
20	1	31	29
20	2	21	12
20	3	44	45
20	4	41	41
20	6	22	13
20	7	26	28
20	8	23	22
21	1	38	38
21	3	20	21
21	4	33	32
21	5	20	20
21	6	27	26
21	7	26	23
22	0	36	31
22	1	23	23
22	2	46	46
22	3	32	33
22	4	22	26
22	5	32	32
23	0	33	33

K	L	FO	FC
23	5	22	15
24	0	29	30
24	1	41	37
24	2	24	20
24	3	23	22
25	1	21	22
	H=	9	
0	1	19	13
0	3	31	44
0	4	53	65
0	7	40	40
0	8	39	36
0	10	41	38
1	0	43	42
1	1	18	16
1	2	99	103
1	3	65	65
1	4	50	46
1	5	17	19
1	6	27	28
1	12	22	25
2	0	22	17
2	3	22	27
2	5	51	55
2	6	27	28
2	7	41	41
2	8	32	27
2	9	42	39
2	10	23	25
2	12	21	13
3	0	40	47
3	1	116	116
3	2	25	32
3	3	85	84
3	4	35	35
3	5	17	19
3	6	28	29
3	8	19	20
3	11	40	37
4	0	28	35
4	2	42	41
4	3	30	27
4	4	38	41
4	5	25	24
4	6	57	58
4	7	19	19
4	8	32	31
4	9	42	39
4	10	33	31
4	11	23	19
5	0	121	123
5	1	74	76
5	2	116	104
5	3	35	36

K	L	FO	FC
5	4	16	3
5	5	20	25
5	6	28	22
5	7	52	49
5	9	21	27
5	10	23	22
5	11	23	23
5	12	22	18
6	1	38	39
6	2	31	27
6	3	60	64
6	5	33	32
6	6	30	41
6	7	63	63
6	8	57	53
6	11	29	28
7	0	60	64
7	1	90	85
7	2	78	78
7	3	24	28
7	4	36	37
7	6	43	44
7	7	36	35
7	8	37	34
7	9	40	38
7	11	34	32
8	1	38	38
8	2	36	35
8	3	46	43
8	4	30	28
8	5	25	24
8	6	37	35
8	7	64	63
8	8	44	41
8	9	34	32
8	11	24	17
9	0	82	90
9	1	43	48
9	2	17	15
9	3	46	43
9	4	29	25
9	5	41	46
9	6	24	26
9	7	32	32
9	8	48	49
9	9	21	23
9	10	38	37
9	11	25	24
10	0	35	34
10	1	19	21
10	2	52	52
10	3	51	52
10	4	22	14
10	5	39	34
10	6	51	51
10	7	29	27

K	L	FO	FC
10	8	29	31
10	9	34	29
10	10	23	20
11	1	36	38
11	2	28	31
11	3	41	42
11	4	57	55
11	5	43	41
11	6	29	29
11	7	32	40
11	9	49	46
11	11	22	24
12	1	26	30
12	3	54	58
12	5	38	37
12	7	27	31
12	8	24	24
12	9	21	22
13	0	30	28
13	1	32	29
13	2	55	56
13	3	21	21
13	4	39	35
13	6	31	29
13	7	25	21
13	8	34	38
13	10	37	31
14	2	35	38
14	3	25	21
14	4	53	53
14	7	30	30
15	0	43	45
15	1	31	32
15	2	27	30
15	6	51	48
15	8	37	36
16	3	25	25
16	5	40	41
16	6	22	23
16	7	24	19
16	9	30	29
17	1	32	30
17	3	35	34
17	4	37	34
17	5	38	42
17	7	46	44
18	0	23	25
18	1	22	17
18	3	24	22
18	4	34	30
18	6	37	34
18	8	24	20
19	0	21	18
19	2	42	44
19	3	35	37
19	4	23	27

K	L	FO	FC
19	5	22	20
19	6	33	31
20	0	40	33
20	5	31	26
20	7	29	31
21	1	40	41
21	2	21	27
21	3	21	13
21	4	34	31
22	1	34	32
23	0	56	55
23	2	32	31
23	3	24	23
24	2	22	19
	H=	10	
0	0	31	35
0	1	45	47
0	3	67	63
0	8	25	25
0	11	40	38
1	0	23	32
1	1	18	21
1	3	46	42
1	4	26	26
1	5	30	25
1	6	20	19
1	7	24	28
1	9	50	49
1	10	39	38
1	11	26	25
2	0	64	67
2	1	28	28
2	2	73	77
2	3	22	23
2	4	32	28
2	5	23	22
2	7	19	13
2	8	19	13
2	10	34	33
3	1	35	34
3	2	26	23
3	5	26	28
3	6	43	44
3	7	53	48
3	8	51	52
3	10	31	28
4	1	84	82
4	2	44	50
4	3	63	63
4	5	22	19
4	6	21	21
4	11	39	16
5	0	42	47
5	1	40	42

K	L	FO	FC
5	2	17	13
5	3	44	44
5	5	32	35
5	6	52	52
5	7	78	75
5	8	31	30
5	9	42	42
6	0	95	99
6	1	33	34
6	2	59	56
6	3	36	33
6	4	27	28
6	5	31	31
6	6	19	19
6	7	35	32
6	9	25	29
6	11	21	18
7	0	45	40
7	1	34	34
7	2	63	65
7	6	73	72
7	7	37	30
7	8	54	55
7	9	22	24
8	0	29	31
8	1	47	53
8	2	27	26
8	3	34	36
8	4	42	43
8	5	35	33
8	6	52	45
8	8	39	36
9	0	34	36
9	1	49	48
9	3	55	55
9	7	56	58
9	8	24	20
9	10	21	21
10	1	19	14
10	2	50	50
10	3	36	31
10	4	26	23
10	5	54	55
10	7	51	50
10	8	20	18
10	9	26	30
11	0	22	13
11	2	51	52
11	4	38	41
11	7	25	24
11	8	24	23
12	0	18	20
12	1	33	33
12	2	37	34
12	3	23	12
12	4	41	42

K	L	FO	FC
12	6	25	30
13	0	21	27
13	1	33	30
13	3	41	40
13	4	26	25
13	5	25	20
13	6	27	22
13	8	20	13
13	9	25	21
14	0	31	26
14	1	31	31
14	2	20	19
14	3	31	32
15	0	26	24
15	1	34	35
15	2	24	27
15	5	26	29
15	7	23	16
15	8	21	18
16	2	52	54
16	4	24	21
17	0	52	55
17	2	26	26
17	4	28	26
17	7	28	27
18	1	29	28
18	2	29	28
18	3	47	41
18	5	26	29
19	1	54	50
19	4	25	21
20	1	29	25
20	4	35	32
21	0	38	38
21	2	34	35
21	3	29	26
22	0	24	26
22	2	25	25
	H=	11	
0	1	39	30
0	2	28	29
0	3	42	42
0	5	26	21
0	7	20	22
0	9	55	51
1	1	31	30
1	2	49	47
1	3	30	31
1	5	22	23
1	6	27	23
1	7	40	33
1	8	25	21
2	2	34	37
2	4	33	34

K	L	FO	FC
2	7	47	45
2	8	31	36
2	10	46	44
3	0	32	29
3	1	29	35
3	2	33	35
3	3	54	53
3	4	32	31
3	6	29	31
3	7	20	11
3	10	21	11
4	0	49	55
4	1	26	31
4	6	67	67
4	7	26	24
4	8	60	62
4	9	31	32
5	1	25	27
5	2	37	37
5	4	26	26
5	5	34	36
5	6	20	20
5	10	21	15
6	0	58	56
6	2	49	58
6	3	26	27
6	4	32	25
6	5	46	46
6	6	25	22
6	7	82	82
6	9	24	28
7	2	24	24
7	4	35	32
7	5	27	28
7	6	28	31
7	7	27	22
8	1	66	66
8	2	28	31
8	3	47	47
8	4	32	31
8	6	54	59
8	7	28	26
8	8	33	35
9	1	41	40
9	2	26	18
9	5	43	44
10	0	30	29
10	1	21	19
10	2	40	48
10	3	32	35
10	4	39	42
10	6	24	16
11	0	34	25
11	1	30	33
11	3	23	21
11	6	30	28

Table B. (concluded)

K	L	FO	FC
12	0	29	32
12	2	42	46
12	3	31	31
12	4	25	17
12	7	21	18
13	1	25	23
13	2	26	31
13	5	23	24
14	0	23	28
14	1	53	51
14	3	21	22
14	7	29	27
15	1	26	26
15	2	36	32
15	3	24	23
15	4	20	19
16	0	60	60
16	1	25	28
16	2	28	24
16	3	27	26
16	5	22	17
16	6	22	27
17	1	28	31
17	2	29	27
17	3	35	35
18	0	32	30
18	1	32	33
18	2	33	30
19	2	35	43
20	0	39	41
20	1	27	28
	H=	12	
0	0	36	33
0	1	31	29
0	2	35	42
0	6	48	46
1	0	25	19
1	1	23	28
1	3	22	24
1	5	20	25
2	0	24	26
2	1	35	32
2	2	31	29
2	5	31	36
2	6	28	25
2	7	39	43
2	8	22	13
3	2	25	27
3	3	30	28
3	5	23	23
3	6	33	33
3	7	34	33
3	8	23	30
4	0	23	15

K	L	FO	FC
4	1	24	22
4	2	31	31
4	6	32	32
4	7	41	35
4	8	21	19
5	0	42	37
5	2	34	37
5	3	22	21
5	4	44	43
5	6	36	34
5	7	49	49
6	0	30	35
6	1	31	31
6	4	27	19
6	6	47	43
7	1	44	43
7	2	27	25
7	3	54	54
7	5	24	29
7	6	36	36
7	7	21	23
7	8	31	33
8	1	29	31
8	2	33	34
8	5	26	29
8	7	26	24
9	0	43	37
9	2	50	55
9	3	30	30
9	4	45	38
9	7	35	32
10	0	20	26
10	1	21	16
10	2	23	23
10	3	29	24
11	1	21	24
11	2	33	34
11	3	45	42
11	4	25	29
12	1	25	23
12	2	25	23
12	5	27	25
13	0	24	25
13	1	22	26
13	3	26	26
14	2	27	27
15	1	31	32
16	0	20	15
16	1	22	16
17	0	40	38
17	2	24	24
	H=	13	
0	2	23	26
0	3	20	13

K	L	FO	FC
0	6	28	27
1	0	43	39
1	1	27	23
1	2	51	45
1	3	41	33
1	4	33	33
1	7	36	37
2	2	33	30
3	0	55	50
3	2	27	22
3	3	26	23
3	5	27	24
3	6	48	47
4	0	29	34
4	3	37	38
4	6	32	32
5	0	41	43
5	2	23	18
5	5	35	30
5	6	23	20
6	2	53	51
6	3	31	30
6	4	24	28
6	5	23	23
7	0	36	33
7	1	27	22
7	2	22	21
7	6	28	27
8	1	24	23
8	2	29	32
8	3	36	36
8	4	25	29
9	0	28	25
9	1	31	31
9	2	23	16
10	1	25	29
10	2	25	20
10	3	28	30
11	0	21	16
11	2	35	34
12	2	35	31
14	1	24	17
	H=	14	
0	0	26	27
0	2	46	41
0	3	27	29
0	4	30	34
1	1	25	22
2	1	28	30
2	3	37	31
2	4	22	22
3	1	21	17
3	2	30	33
4	3	25	21

K	L	FO	FC
5	1	25	24
5	2	37	37
6	0	27	28
7	1	34	32
8	1	21	18
8	2	29	28

Table C. Observed (FO) and Calculated (FC) Structure Factors for $Fe_2(DSALZ)\cdot C_3H_6O$.

K	L	FO	FC
	H= 0		
0	2	182	222
0	4	191	160
0	6	44	31
0	8	178	170
0	10	72	73
0	12	47	50
0	14	47	46
1	3	321	261
1	5	44	36
1	7	24	24
1	9	22	29
1	11	39	37
1	13	22	20
1	15	22	23
2	0	166	212
2	2	11	46
2	4	92	130
2	6	15	27
2	8	101	101
2	10	41	42
3	1	15	49
3	3	29	19
3	5	95	89
3	7	16	27
3	11	80	83
3	15	44	49
4	0	227	175
4	2	23	27
4	6	21	9
5	1	16	43
5	3	17	20
5	5	67	54
5	7	69	64
5	9	20	7
5	11	62	62
5	13	27	31
5	15	24	24
6	0	53	34
6	2	39	21
6	4	47	65
6	8	77	67
6	10	52	49
6	12	28	34
6	14	29	30
7	1	64	64
7	3	80	79
7	5	53	48
7	9	39	42
7	11	35	40
8	0	224	189
8	2	60	45
8	4	160	173
8	6	44	47
8	8	88	84
8	10	83	87
8	12	41	45
8	14	42	46
9	1	66	60
9	3	53	57
9	5	86	85
9	7	59	59
9	15	25	29
10	2	15	29
10	4	31	41
10	6	22	22
10	8	16	11
10	10	29	19
10	12	39	40
11	1	52	53
11	3	43	47
11	5	29	25
11	7	43	41
11	11	36	35
12	2	32	43
12	4	24	18
12	10	40	37
13	1	28	25
13	3	34	37
13	7	21	24
13	9	17	11
13	11	32	34
14	2	24	23
14	4	52	49
14	8	19	16
14	10	33	35
15	1	19	17
16	0	19	19
16	4	60	57
16	6	17	24
16	8	22	27
17	7	23	27
18	4	27	29
	H= 1		
0	3	125	194
0	7	37	28
0	9	45	45
0	13	26	21
0	15	20	20
1	1	266	250
1	2	90	61
1	3	26	13
1	4	98	82
1	5	27	31
1	7	46	47
1	8	24	26
1	9	115	110
1	13	49	52
1	15	20	29
1	17	27	29
2	1	69	43
2	2	230	222
2	3	62	117
2	4	83	75
2	5	81	94
2	6	62	61
2	7	13	12
2	8	76	76
2	9	23	15
2	10	59	57
2	12	51	53
2	14	27	27
2	16	38	32
3	1	65	49
3	2	202	157
3	3	69	64
3	4	41	23
3	5	27	15
3	6	38	44
3	7	17	4
3	8	22	24
3	9	52	54
3	10	14	4
3	11	15	16
3	13	20	15
3	14	25	24
3	16	24	23
4	1	259	262
4	2	159	140
4	4	59	54
4	5	38	59
4	6	62	66
4	7	16	17
4	10	69	73
5	1	141	123
5	3	110	88
5	4	17	17
5	5	14	12
5	6	61	54
5	7	83	82
5	9	30	25
6	1	101	124
6	2	135	125
6	3	15	5
6	4	20	12
6	5	17	3
6	6	15	12
6	7	27	37
6	8	28	30
6	9	16	18
6	10	88	94
6	12	23	27
6	16	24	20
7	1	151	152
7	2	14	9
7	5	78	75
7	7	33	30
7	9	105	101
7	10	19	21
7	11	39	38
7	12	26	29
7	13	58	60
7	15	28	27
8	2	30	22
8	3	24	3
8	4	22	17
8	5	57	46
8	6	43	48
8	8	24	21
8	9	43	45
8	10	35	39
8	11	35	37
8	12	33	35
8	13	20	28
9	1	91	96
9	3	20	18
9	4	34	30
9	5	89	89
9	6	47	52
9	8	16	18
9	9	45	47
9	13	27	24
10	1	26	32
10	2	97	94
10	4	19	14
10	5	19	15
10	6	73	76
10	8	19	18
10	9	23	23
10	10	16	18
10	12	28	27
10	13	22	21
11	1	14	8
11	2	44	41
11	6	21	19
11	10	16	18
11	12	24	27
12	2	25	18
12	8	48	48
12	10	24	28
12	12	18	13
13	1	24	25
13	3	17	14
13	4	16	9
13	5	33	34
13	9	26	28
13	10	29	25
14	8	17	19
14	9	19	17
15	1	33	34
15	3	37	39
15	4	18	10
15	5	53	57
15	9	33	33
16	1	18	16
16	5	21	28
17	3	24	27
17	5	30	30
18	6	28	24
	H= 2		
0	0	287	346
0	2	38	130
0	4	220	222
0	6	110	137
0	8	167	143
0	10	66	66
0	12	36	36
0	14	26	27
1	0	315	340
1	1	22	83
1	2	19	19
1	3	64	80
1	4	195	143
1	5	50	40
1	6	15	24
1	7	52	49
1	8	102	88
1	9	29	31
1	10	44	41
1	11	38	41
1	12	18	14
1	14	35	39
2	0	126	73
2	1	16	5
2	2	41	70
2	3	24	47
2	4	86	29
2	5	160	164
2	6	37	55
2	7	107	109
2	8	43	52
2	10	18	11
2	11	25	28
2	12	15	20
2	15	30	20
3	0	94	85
3	1	80	94
3	2	78	78
3	3	62	44
3	4	53	41
3	5	28	27
3	6	64	96
3	7	23	4
3	8	14	23
3	10	24	10
3	11	84	89
3	15	22	20
4	0	142	84
4	1	135	113
4	2	57	82
4	3	68	60
4	4	52	14
4	5	39	44
4	6	41	27
4	7	23	31
4	9	23	24
4	10	25	25
4	11	38	41
4	12	23	38
4	14	19	17
4	15	51	58
5	0	172	154
5	1	142	121
5	2	60	49
5	3	53	50
5	4	26	24
5	8	14	10
5	9	22	20
5	11	66	64
5	14	31	40
6	0	20	49
6	1	84	94
6	2	74	80
6	3	23	16
6	5	47	52
6	6	26	9
6	7	42	50
6	8	34	38
6	9	28	25
6	10	29	34
6	11	21	18
6	14	18	15
7	0	188	178
7	1	89	84
7	2	16	18
7	3	49	42
7	4	117	118
7	5	24	28
7	6	48	35
7	7	31	33
7	8	47	48
7	9	22	14
7	10	55	58
7	12	22	14
7	14	24	24
8	0	282	218
8	1	58	45
8	2	56	67
8	3	39	37
8	4	85	74
8	5	26	26
8	6	26	24
8	8	58	63
8	9	32	40
8	10	45	46
8	11	17	18
8	12	47	44
8	14	21	17
9	1	37	38
9	2	14	8
9	3	54	58
9	4	83	78
9	5	26	33
9	6	35	34
9	7	47	49
9	8	51	55
9	9	16	13
9	10	47	50
9	11	24	23
9	12	34	32
9	14	27	23
10	0	39	49
10	1	40	46
10	2	16	26
10	3	26	22
10	5	45	50
10	7	42	48
10	9	17	17
10	11	25	24
11	1	33	36
11	3	34	32
11	5	17	17
11	6	24	23
11	7	38	49
12	1	34	30
12	2	23	17
12	3	37	37
12	4	25	28
12	6	21	24
12	7	24	25
12	11	25	28
13	0	24	24
13	1	20	19
13	2	18	22
13	4	34	31
13	5	36	34
13	6	20	16
13	7	26	29
13	10	29	28
14	4	44	43
15	0	34	36
15	4	39	42
15	8	22	18
15	13	19	20
16	4	31	32
17	0	33	37
17	4	27	28
17	7	19	26
18	3	20	25
18	4	18	17
	H= 3		
0	1	51	59
0	3	175	95
0	5	229	170
0	7	45	51
0	9	130	140
0	11	32	43
0	13	41	45
0	15	31	34
0	17	23	30
1	2	89	76
1	3	45	51
1	4	23	37
1	5	12	2
1	6	59	67
1	7	37	38
1	8	68	74
1	9	53	49
1	12	47	46
1	13	27	28
1	14	23	21
1	16	19	20
2	1	244	250
2	2	213	196
2	3	137	76
2	4	96	88
2	5	101	76
2	7	13	22
2	8	67	65
2	9	69	72
2	10	69	65
2	12	43	45
2	13	38	35
3	1	12	11
3	2	61	77
3	3	77	75
3	4	21	5
3	5	66	59
3	6	140	126
3	8	61	57
3	10	55	54
3	12	32	33
3	14	41	44
3	16	34	41
4	1	54	71
4	2	86	71
4	3	71	82
4	4	25	31
4	5	41	66
4	6	69	95
4	7	23	14

Table C. (continued)

K	L	FC	FC
4	3	23	24
4	9	17	9
4	10	59	60
4	11	20	15
5	1	145	149
5	2	129	126
5	6	34	45
5	8	26	30
5	10	57	52
5	11	36	32
5	14	37	36
5	16	31	35
6	1	121	97
6	2	94	90
6	3	71	85
6	5	93	103
6	6	27	31
6	8	41	47
6	9	53	47
6	10	34	31
6	13	49	49
7	1	17	29
7	2	60	63
7	4	44	41
7	5	89	86
7	6	19	21
7	8	23	30
7	9	28	33
7	10	28	29
8	1	102	81
8	2	70	55
8	3	56	60
8	4	83	82
8	5	123	129
8	6	23	15
8	8	21	25
8	9	80	79
8	10	23	27
8	12	20	21
8	13	45	48
9	1	71	70
9	2	62	61
9	4	14	8
9	6	34	35
9	7	33	42
9	8	25	20
9	12	21	19
9	14	19	22
10	1	46	40
10	2	38	41
10	3	52	53
10	4	17	23
10	5	51	54
10	6	91	98
10	7	29	25
10	9	39	35

K	L	FC	FC
11	1	29	26
11	2	103	100
11	3	22	21
11	5	31	39
11	6	21	26
11	8	17	19
11	10	34	37
11	12	17	17
11	14	23	19
12	1	33	39
12	5	40	33
12	7	22	31
13	2	17	16
13	6	28	24
13	10	22	22
14	1	39	47
14	3	19	14
14	5	35	34
14	9	32	29
15	4	16	8
15	1	38	42
16	3	24	17
16	5	32	32
16	7	17	14
16	9	20	22
17	2	24	23
H= 4			
0	0	171	138
0	2	136	66
0	4	57	76
0	5	45	33
0	9	22	40
0	12	21	16
1	0	230	142
1	1	69	31
1	2	173	158
1	3	41	48
1	4	135	148
1	5	12	5
1	6	147	124
1	8	105	112
1	9	19	16
1	10	59	64
1	12	54	47
1	14	35	40
2	9	79	105
2	3	154	115
2	4	103	127
2	5	51	38
2	7	91	91
2	8	19	18
2	10	48	41
2	11	91	93
2	14	29	30

K	L	FO	FC
2	15	23	27
3	0	123	99
3	2	62	30
3	5	95	81
3	6	75	69
3	7	64	58
3	9	15	15
4	0	65	63
4	1	44	35
4	2	33	9
4	3	105	91
4	4	13	41
4	6	62	75
4	7	108	106
4	8	25	36
4	9	18	22
4	11	70	66
4	15	39	43
5	0	73	44
5	1	26	14
5	2	23	7
5	4	51	46
5	5	46	35
5	6	110	108
5	8	27	28
5	10	21	18
5	14	34	31
6	0	113	124
6	1	91	93
6	2	23	37
6	3	45	51
6	5	89	78
6	6	15	23
6	7	54	49
6	8	37	37
6	9	47	54
6	10	48	48
6	13	21	18
6	14	17	28
6	15	20	23
7	0	73	79
7	1	32	24
7	2	16	32
7	3	18	16
7	4	138	129
7	5	24	32
7	6	65	69
7	8	64	61
7	9	27	27
7	10	28	18
7	11	19	13
7	12	44	48
7	13	23	29
7	14	27	28
8	0	92	99
8	1	44	41

K	L	FO	FC
8	2	38	39
8	3	28	25
8	6	18	8
9	0	149	153
9	1	38	38
9	2	42	43
9	4	109	109
9	5	17	14
9	6	23	24
9	7	26	27
9	8	60	53
9	10	63	62
9	12	31	33
9	14	25	38
10	1	58	56
10	2	15	4
10	3	81	80
10	4	48	45
10	5	37	43
10	6	32	35
10	7	86	87
10	11	33	35
11	1	31	36
11	4	17	20
11	6	32	28
12	0	66	67
12	1	44	49
12	3	22	17
12	5	36	34
12	7	37	39
12	8	16	15
12	9	19	15
12	11	27	26
13	0	20	21
13	2	25	24
13	4	44	48
13	8	22	24
13	10	26	24
13	12	17	18
14	0	48	51
14	3	18	14
15	0	49	56
15	2	24	27
15	4	35	35
16	0	18	17
17	0	37	42
17	4	38	29
18	3	22	24
H= 5			
0	1	43	38
0	3	76	95
0	5	210	222
0	7	87	69
0	9	82	71

K	L	FO	FC
0	11	39	49
0	13	43	41
1	1	156	150
1	2	69	55
1	3	88	62
1	4	56	55
1	5	122	119
1	8	44	44
1	9	65	57
1	10	42	42
1	11	18	14
1	12	20	23
1	13	22	21
1	14	23	23
2	1	31	18
2	2	181	80
2	3	161	160
2	4	44	34
2	5	98	105
2	6	44	37
2	9	52	45
2	10	24	23
2	12	25	25
2	13	22	26
2	14	26	31
3	1	16	2
3	2	89	80
3	3	75	97
3	4	22	22
3	5	110	97
3	6	94	93
3	7	49	42
3	8	92	51
3	9	41	28
3	10	74	73
3	12	16	15
3	14	24	29
4	2	44	44
4	3	31	18
4	4	23	12
4	5	46	34
4	6	155	153
4	8	42	42
4	9	13	22
4	10	44	39
4	11	21	12
4	12	34	42
4	14	36	34
4	16	21	26
5	1	64	51
5	2	90	97
5	3	15	30
5	4	30	24
5	5	68	53
5	6	58	40
5	8	44	61

K	L	FO	FC
5	9	71	76
5	10	37	34
5	11	16	22
5	16	22	24
6	1	39	49
6	3	51	44
6	5	110	97
6	6	72	74
6	7	43	35
6	8	20	12
6	9	38	42
6	10	21	24
6	13	32	29
7	1	81	65
7	2	44	36
7	3	19	14
7	4	56	56
7	5	76	73
7	6	25	23
7	7	16	22
7	8	31	28
7	9	61	64
7	10	23	25
7	13	21	22
8	1	22	28
8	2	23	20
8	3	20	19
8	5	96	87
8	7	24	32
8	8	15	4
8	9	51	55
8	10	42	43
8	13	37	42
9	1	72	78
9	2	29	31
9	3	18	13
9	4	35	39
9	5	50	46
9	6	31	32
9	9	28	32
9	12	28	28
9	13	28	28
10	1	26	33
10	2	46	50
10	3	33	30
10	5	18	11
10	7	35	36
10	9	31	32
10	10	21	22
11	2	53	55
11	3	47	51
11	5	25	18
11	6	82	82
11	8	20	17
11	10	26	30
11	12	29	28

K	L	FC	FC
12	1	21	23
12	2	68	68
12	3	22	25
12	5	46	54
12	6	38	35
12	9	27	23
12	10	29	26
13	1	69	69
13	2	22	24
13	3	16	12
13	4	23	23
13	5	19	10
13	9	20	20
14	1	25	17
14	5	28	27
15	1	27	31
15	2	21	23
15	7	20	16
15	9	24	25
16	1	42	42
16	5	20	19
16	7	21	21
17	2	23	25
H= 6			
0	0	18	22
0	2	21	31
0	4	135	111
0	6	55	47
0	8	77	89
0	10	22	27
0	12	40	32
0	14	26	22
0	16	21	30
1	0	80	66
1	1	33	16
1	2	130	104
1	3	54	53
1	4	64	53
1	5	18	6
1	6	84	76
1	7	43	44
1	8	39	35
1	9	38	27
1	11	38	25
1	12	28	35
2	0	76	87
2	1	14	13
2	2	109	85
2	3	122	124
2	4	154	132
2	5	62	68
2	6	70	66
2	7	60	56
2	8	56	66

K	L	FO	FC
2	10	57	88
2	14	39	40
3	0	54	47
3	1	94	72
3	2	54	36
3	3	152	163
3	4	52	41
3	5	13	14
3	6	17	27
3	7	111	100
3	9	15	18
3	11	69	69
3	15	26	29
4	0	134	120
4	1	42	50
4	3	47	46
4	5	39	31
4	6	27	40
4	7	43	47
4	8	15	1
4	9	25	26
4	10	17	22
4	11	38	39
5	0	38	39
5	1	45	51
5	3	27	26
5	4	36	33
5	5	92	84
5	6	24	18
5	7	82	74
5	8	16	22
5	9	28	33
5	10	16	12
5	11	34	44
5	14	18	11
5	15	27	29
6	0	135	116
6	1	58	43
6	2	14	9
6	4	88	87
6	6	51	60
6	7	15	19
6	8	86	83
6	10	59	59
6	12	27	38
6	14	32	37
7	0	17	7
7	2	13	22
7	4	39	36
7	5	69	61
7	7	29	23
7	9	20	18
7	11	20	25
7	12	22	20
8	0	93	93
8	2	31	23

Table C. (continued)

K	L	FO	FC
8	3	23	26
8	4	35	27
8	5	50	52
8	7	40	39
8	9	63	51
8	10	50	43
8	12	23	29
8	14	22	21
9	1	13	16
9	2	13	19
9	3	29	26
9	4	57	57
9	6	34	33
9	7	31	29
9	9	16	15
9	10	39	44
9	11	47	37
9	12	20	14
10	0	43	45
10	2	19	22
10	3	40	41
10	4	63	64
10	5	21	19
10	7	44	46
10	11	20	27
10	13	21	23
11	1	44	45
11	3	59	56
11	5	19	21
11	7	44	44
11	9	19	17
11	11	30	36
12	0	33	35
12	1	20	21
12	2	32	38
12	5	16	7
12	6	25	21
12	7	25	18
12	9	19	15
12	10	22	21
13	0	27	32
13	1	17	18
13	4	38	44
13	5	25	29
13	7	21	25
13	11	17	23
14	0	53	62
14	4	26	27
14	8	37	34
14	10	27	32
15	2	17	17
15	8	59	65
16	4	35	33
16	8	22	23
17	0	27	31
18	4	10	7

K	L	FO	FC
	H= 7		
0	1	22	30
0	3	35	32
0	5	36	33
0	7	14	27
0	9	17	2
1	1	175	162
1	2	57	57
1	3	94	101
1	4	51	47
1	5	202	196
1	6	15	7
1	7	38	39
1	9	61	56
1	13	21	31
2	2	72	73
2	3	59	52
2	4	63	63
2	5	17	21
2	6	79	61
2	8	23	31
2	10	39	40
2	12	32	30
2	14	33	34
3	1	18	21
3	2	53	46
3	3	14	18
3	4	44	38
3	5	15	2
3	6	10	9
3	7	21	25
3	8	21	11
3	9	29	33
3	13	21	21
3	14	10	16
4	1	45	39
4	2	79	78
4	4	59	54
4	5	19	24
4	6	125	117
4	9	22	16
4	11	77	76
4	12	58	57
4	14	29	24
4	15	24	30
5	1	57	55
5	2	52	51
5	3	20	19
5	5	42	46
5	6	50	47
5	7	18	12
5	8	36	35
5	9	47	46
5	13	20	26
5	15	17	13

K	L	FO	FC
5	1	65	65
6	2	42	38
6	5	37	26
6	6	58	59
6	8	37	38
6	9	24	34
6	12	22	19
7	1	49	48
7	2	83	79
7	3	44	43
7	5	99	100
7	8	44	41
7	9	82	83
7	10	25	25
7	13	38	36
8	2	17	12
8	3	29	32
8	9	25	25
8	10	30	35
8	12	19	19
8	14	21	16
9	1	44	44
9	2	22	20
9	3	49	53
9	5	81	85
9	8	25	28
9	9	51	47
9	13	40	42
10	2	82	82
10	4	16	18
10	6	21	22
10	10	51	53
10	12	24	28
11	2	48	45
11	3	23	29
11	4	24	23
12	1	29	40
12	2	69	65
12	3	16	24
12	4	20	24
12	5	17	17
12	6	39	36
12	8	24	21
12	10	40	37
12	12	20	18
13	1	39	37
13	2	31	40
13	5	39	34
13	7	17	6
13	9	34	34
14	1	27	34
14	3	17	17
14	5	24	23
14	8	27	26
15	1	23	21
15	2	21	22

K	L	FO	FC
15	3	25	23
15	5	26	27
15	6	28	26
15	9	31	31
17	1	29	38
17	5	18	19
18	2	24	30
	H= 8		
0	0	92	103
0	4	100	98
0	6	21	22
0	8	63	59
0	10	32	23
0	12	23	26
0	14	37	40
0	16	24	24
1	0	60	44
1	2	93	93
1	3	82	74
1	4	152	145
1	5	42	39
1	7	37	37
1	8	43	35
1	10	26	20
1	11	24	24
2	0	20	20
2	2	15	22
2	3	19	22
2	4	112	103
2	6	42	51
2	7	46	42
2	8	46	39
2	9	22	24
2	10	26	19
2	11	28	33
2	12	19	20
2	14	30	37
2	16	21	13
3	1	61	65
3	2	31	36
3	3	124	119
3	4	33	41
3	5	52	54
3	7	76	76
3	11	65	67
3	15	28	21
4	0	88	78
4	1	32	28
4	2	15	2
4	3	41	34
4	4	45	39
4	7	33	39
4	8	17	24
4	9	37	35

K	L	FO	FC
4	11	25	19
4	15	19	15
5	0	81	77
5	1	89	79
5	3	61	55
5	4	54	53
5	5	60	60
5	6	37	36
5	7	72	77
5	8	16	17
5	9	19	21
5	10	17	18
5	11	34	35
5	15	23	21
6	0	88	83
6	2	10	1
6	3	29	23
6	4	84	77
6	6	32	22
6	8	70	75
6	9	20	14
6	10	24	30
6	11	22	29
6	12	21	18
6	14	26	26
7	0	40	49
7	1	32	29
7	2	32	38
7	4	32	27
7	6	62	60
7	7	29	34
7	8	31	33
7	9	21	19
7	10	35	37
7	12	22	21
7	14	23	27
8	0	67	78
8	4	81	79
8	6	31	30
8	7	22	25
8	8	31	31
8	10	36	39
8	12	29	28
9	0	19	24
9	1	31	32
9	3	44	48
9	4	20	22
9	6	10	13
9	7	21	15
9	8	38	28
9	11	35	35
10	0	34	25
10	1	26	26
10	2	16	15
10	4	42	41
10	5	26	32

K	L	FO	FC
10	7	22	21
10	12	20	17
11	1	63	65
11	2	16	18
11	3	67	67
11	7	28	26
11	9	19	26
11	11	44	46
12	0	52	46
12	2	24	22
12	11	22	21
13	0	19	14
13	1	21	23
13	2	26	27
13	5	26	24
13	6	23	32
13	7	29	32
14	0	37	39
14	3	27	22
14	4	39	47
14	8	20	21
15	0	40	40
15	4	26	26
15	6	26	25
16	0	26	24
16	3	23	22
16	4	24	23
18	0	22	24
	H= 9		
0	1	115	109
0	3	45	36
0	5	96	88
0	7	45	40
0	9	60	62
0	13	46	47
0	15	25	35
1	1	27	16
1	3	82	84
1	4	28	31
1	5	58	65
1	6	30	25
1	7	19	22
1	9	40	41
1	10	19	19
1	12	19	21
1	13	17	19
2	1	27	31
2	2	68	56
2	3	14	15
2	5	74	73
2	6	31	30
2	8	16	7
2	9	47	49
2	10	19	21

K	L	FO	FC
2	12	34	36
2	13	33	30
3	1	13	13
3	2	29	34
3	3	49	56
3	4	34	36
3	5	14	11
3	6	91	91
3	8	19	22
3	10	38	39
3	12	39	41
3	14	19	26
4	1	45	39
4	2	81	84
4	3	29	30
4	4	26	27
4	6	84	80
4	8	22	23
4	12	40	39
5	1	33	47
5	2	141	137
5	3	28	20
5	4	57	58
5	6	85	83
5	9	19	20
5	10	33	36
5	11	17	19
5	12	27	28
5	14	25	23
6	1	66	63
6	2	40	41
6	3	88	78
6	4	19	20
6	5	111	117
6	6	37	36
6	8	19	22
6	9	48	45
6	13	27	30
6	14	21	17
7	1	35	42
7	3	34	27
7	5	20	17
7	7	16	23
7	8	59	56
7	9	19	22
7	12	16	12
7	13	21	30
8	1	46	46
8	3	32	33
8	5	71	72
8	6	16	16
8	9	58	47
8	10	18	18
8	12	22	25
8	13	34	37
9	1	49	51

K	L	FO	FC
9	2	44	40
9	3	35	35
9	4	15	2
9	5	55	53
9	7	24	29
9	8	33	30
9	9	20	16
9	10	18	20
9	13	22	16
10	1	16	15
10	2	93	91
10	4	19	19
10	8	18	25
10	9	20	22
10	10	38	29
11	1	32	30
11	2	21	20
11	6	20	17
11	10	31	29
12	1	43	42
12	2	26	29
12	7	17	18
13	1	21	21
13	2	57	59
13	6	31	33
13	10	29	29
14	1	40	35
14	3	39	44
14	5	61	65
14	6	19	14
14	9	22	30
15	2	25	27
16	3	18	17
	H= 10		
0	0	72	71
0	2	54	45
0	4	20	18
1	0	73	93
1	1	63	57
1	2	26	44
1	3	94	87
1	4	150	132
1	6	25	22
1	7	15	13
1	8	51	52
1	10	35	34
1	12	24	21
1	14	43	47
2	0	73	65
2	1	20	17
2	2	18	15
2	3	24	20
2	4	14	19
2	5	21	21

Table C. (continued)

K	L	FC	FC
2	6	21	20
2	7	73	65
2	11	55	55
2	13	19	27
2	15	21	23
3	0	92	94
3	1	40	39
3	2	88	73
3	3	31	29
3	4	91	71
3	5	33	28
3	6	21	19
3	8	19	26
3	12	24	23
4	1	90	85
4	2	44	42
4	3	69	67
4	4	30	20
4	5	41	45
4	7	59	57
4	9	33	33
4	11	47	52
4	15	35	39
5	0	65	57
5	1	31	30
5	2	59	70
5	3	18	16
5	4	80	94
5	6	33	41
5	7	16	13
5	8	19	23
6	0	23	21
6	1	50	48
6	3	92	89
6	4	15	0
6	6	16	13
6	7	30	30
6	8	18	9
6	9	23	19
6	11	36	33
7	0	115	107
7	2	16	5
7	4	105	113
7	6	68	71
7	7	48	52
7	8	36	32
7	10	35	35
7	12	34	34
7	14	39	39
8	0	21	23
8	1	32	36
8	3	38	27
8	11	17	12
9	0	26	16
9	3	20	20
9	4	53	55

K	L	FC	FC
9	8	48	38
10	0	29	34
10	1	48	48
10	3	32	35
10	5	34	34
10	7	38	34
11	0	26	31
11	2	30	26
11	6	21	18
11	7	26	34
11	8	24	24
12	1	43	45
12	3	44	44
12	5	28	27
12	6	17	18
12	7	42	47
12	11	32	31
13	0	21	18
13	1	17	14
13	2	26	23
13	4	50	52
13	6	33	35
14	0	17	25
14	6	20	22
15	0	52	56
15	4	39	42
15	6	19	21
16	1	19	19
16	3	23	26
	H= 11		
0	1	98	92
0	3	137	139
0	5	98	100
0	7	23	34
0	9	54	55
0	13	52	53
0	15	22	25
1	1	14	1
1	2	78	65
1	3	25	33
1	4	18	16
1	5	26	30
1	6	49	45
1	8	17	13
1	9	19	13
1	12	24	27
2	1	61	65
2	2	38	27
2	5	47	51
2	8	24	28
2	9	23	28
2	13	29	34
3	1	40	26
3	2	130	129

K	L	FC	FC
3	3	13	2
3	4	51	53
3	5	37	40
3	6	69	65
3	8	22	17
3	9	20	22
3	10	21	21
3	12	52	51
4	1	19	7
4	2	39	38
4	3	61	53
4	7	24	19
4	10	32	38
5	1	15	25
5	2	100	108
5	3	16	3
5	4	43	49
5	5	20	23
5	6	81	80
5	9	17	19
5	10	35	34
5	12	33	40
5	13	17	15
5	14	24	21
6	1	37	42
6	2	32	32
6	3	59	56
6	5	68	53
6	8	37	37
6	9	21	28
6	13	32	33
7	1	22	32
7	2	15	13
7	3	25	23
7	5	48	43
7	6	45	44
7	9	20	20
8	1	63	63
8	3	62	58
8	5	68	69
8	6	15	17
8	7	38	32
8	9	54	58
8	13	33	35
9	1	19	22
9	2	64	64
9	3	15	13
9	5	16	20
9	6	34	38
9	7	22	24
9	8	39	37
10	1	38	32
10	4	21	18
10	7	19	22
10	9	27	27
11	2	46	47

K	L	FO	FC
11	4	17	16
11	6	44	45
11	7	19	21
11	8	37	36
12	1	16	19
12	2	28	24
12	3	32	40
12	5	21	23
12	6	18	18
13	2	37	37
13	5	30	36
13	6	30	29
13	8	28	22
14	1	29	25
14	3	29	33
14	5	30	35
15	5	19	17
16	1	35	20
16	5	19	10
	H= 12		
0	0	84	99
0	4	83	78
0	6	24	23
0	10	22	31
0	14	19	18
1	0	51	41
1	1	20	17
1	2	37	21
1	4	82	90
1	5	34	32
1	8	31	31
1	11	16	18
1	14	26	28
2	0	86	99
2	1	23	29
2	3	78	81
2	4	73	69
2	5	28	26
2	7	29	23
2	8	41	39
2	10	17	22
2	11	29	28
2	12	28	22
2	14	19	17
3	0	36	19
3	1	63	60
3	2	33	27
3	3	52	47
3	4	49	57
3	6	17	19
3	7	23	21
3	8	19	24
3	9	25	31
3	11	41	43

K	L	FO	FC
4	0	25	14
4	1	77	77
4	3	86	85
4	4	27	32
4	5	31	30
4	7	42	37
4	8	18	18
4	11	32	39
5	0	68	76
5	1	29	30
5	2	21	18
5	3	55	58
5	4	45	43
5	5	35	31
5	6	27	25
5	7	34	37
5	11	38	40
5	13	28	16
6	0	62	54
6	1	27	26
6	3	21	23
6	4	73	78
6	6	33	28
6	7	61	57
6	9	31	26
6	10	36	32
6	11	28	26
6	13	22	25
7	0	62	68
7	2	15	12
7	4	67	63
7	5	23	21
7	6	25	21
7	7	23	13
7	8	33	33
7	10	37	35
8	0	40	34
8	1	29	38
8	3	21	19
8	4	39	43
8	5	32	37
8	7	28	25
8	8	29	28
8	9	21	24
9	1	23	23
9	6	27	26
9	8	26	23
9	12	19	22
10	0	51	50
10	1	22	19
10	4	28	17
10	5	20	21
10	7	40	41
10	8	25	21
11	0	32	33
11	1	37	34

K	L	FO	FC
11	2	34	39
11	3	23	34
11	5	27	29
11	7	20	14
12	1	38	40
12	3	36	34
12	7	37	44
13	0	26	22
13	6	18	11
13	7	24	29
14	0	24	29
14	3	19	22
14	4	24	23
14	6	20	19
15	0	32	30
15	4	21	26
16	0	26	23
	H= 13		
0	1	23	40
0	3	16	28
0	5	35	33
0	7	34	36
0	9	42	40
0	13	16	18
1	1	91	99
1	2	31	34
1	3	49	40
1	5	53	49
1	6	42	40
1	7	34	31
1	8	19	17
1	9	26	22
1	13	32	33
2	2	85	83
2	3	20	26
2	4	54	52
2	6	16	17
2	8	25	25
2	10	33	32
2	12	19	21
3	1	18	24
3	2	53	47
3	3	30	17
3	4	23	23
3	5	38	38
3	6	54	56
3	9	49	55
3	11	18	21
3	13	24	21
4	2	122	122
4	4	17	15
4	6	72	75
4	8	36	40
4	10	34	36

K	L	FC	FC
4	12	56	64
5	1	47	39
5	2	33	32
5	3	55	59
5	4	28	30
5	5	63	68
5	6	35	32
5	9	26	32
5	11	20	22
5	12	22	24
6	2	32	31
6	4	23	26
6	6	41	41
6	10	24	29
7	1	42	40
7	3	64	68
7	4	22	24
7	5	42	41
7	7	25	28
7	8	18	17
7	9	51	52
7	10	16	11
7	12	19	13
8	1	24	19
8	2	30	31
8	4	24	23
8	7	18	16
8	9	18	18
9	1	42	38
9	5	23	23
9	8	44	48
9	9	33	30
10	1	19	11
10	2	34	37
10	6	17	17
10	8	22	28
10	10	18	16
11	2	19	17
11	8	25	21
12	2	39	41
12	6	33	40
12	8	19	24
13	1	26	27
13	2	20	21
14	6	23	21
15	1	31	30
15	3	21	18
	H= 14		
0	0	99	83
0	2	97	98
0	4	48	55
0	8	32	34
0	10	26	28
0	12	22	27

K	L	FO	FC
1	2	36	38
1	3	34	31
1	4	39	41
1	5	27	23
1	8	16	18
2	0	87	73
2	4	79	87
2	5	19	21
2	7	17	24
2	8	59	59
2	9	23	15
2	10	27	31
2	12	20	23
3	0	26	17
3	1	75	76
3	2	52	57
3	3	84	83
3	5	91	58
3	6	34	28
3	7	71	69
3	11	51	52
4	0	22	36
4	1	29	29
4	4	23	15
4	5	22	23
5	0	28	22
5	1	53	54
5	3	62	65
5	4	56	55
5	5	30	29
5	6	21	21
5	7	54	56
5	11	47	51
6	0	78	92
6	3	36	31
6	4	59	56
6	5	26	25
6	8	54	57
6	9	22	19
6	10	36	30
6	12	22	18
7	2	22	17
8	0	54	56
8	2	26	31
8	3	15	11
8	4	21	14
8	5	22	13
8	6	21	15
8	7	17	19
8	8	25	26
9	1	26	19
9	3	22	18
9	11	18	19
10	0	28	33
10	4	41	39
11	1	38	39

Table C. (concluded)

K	L	FO	FC
11	3	47	49
11	7	42	45
12	9	27	24
13	1	22	20
13	2	19	9
13	3	25	25
13	7	31	30
14	0	40	39
14	4	23	24
	H= 15		
0	3	117	106
0	5	40	41
0	7	23	25
0	9	21	17
1	1	54	51
1	4	21	21
1	5	18	16
1	6	30	31
1	7	22	29
1	9	50	52
1	13	25	27
2	1	23	33
2	2	47	46
2	3	35	25
2	5	41	41
2	6	42	44
2	8	31	31
2	9	10	15
2	10	19	13
3	1	23	20
3	2	51	45
3	5	40	40
3	7	17	11
3	8	21	27
3	9	21	21
3	12	22	16
4	2	68	65
4	3	22	26
4	4	45	45
4	6	74	76
4	8	44	46
4	10	35	35
4	12	39	45
5	1	34	32
5	2	20	27
5	9	59	63
6	1	35	25
6	2	50	53
6	3	20	24
6	4	31	32
6	5	20	33
6	6	26	26
6	8	19	16
7	1	46	48

K	L	FO	FC
7	5	31	32
7	6	16	17
7	7	35	35
7	8	26	27
7	9	36	35
8	1	17	13
8	5	24	26
8	9	21	22
9	1	17	19
9	2	14	22
9	3	26	26
9	5	25	26
10	2	30	34
10	4	19	20
10	6	24	24
10	8	20	20
11	2	24	23
11	3	27	23
11	6	23	20
12	2	45	49
12	6	31	28
13	1	24	25
13	5	19	18
	H= 16		
0	0	24	19
0	2	50	57
0	4	43	47
0	8	35	30
1	0	37	31
1	1	24	31
1	2	31	32
1	4	34	40
1	6	19	21
1	8	38	34
1	10	37	40
2	0	64	55
2	1	25	23
2	2	31	36
2	3	19	25
2	4	44	40
2	5	25	26
2	7	52	56
2	8	29	32
2	9	25	23
2	11	24	24
3	0	64	64
3	1	20	23
3	2	16	11
3	3	63	60
3	4	21	24
3	6	27	28
3	7	92	94
3	11	19	26
4	0	26	12

K	L	FO	FC
4	1	55	59
4	2	31	21
4	3	79	82
4	4	35	29
4	5	25	24
4	7	65	69
4	11	25	26
5	0	53	61
5	1	32	32
5	2	23	23
5	3	38	40
5	4	35	37
5	5	19	16
5	7	35	45
5	8	20	20
5	11	24	27
6	0	48	46
6	2	27	28
6	3	29	31
6	8	38	42
7	0	38	37
7	2	19	22
7	4	39	40
7	6	29	29
7	8	27	26
7	10	19	17
8	3	20	14
8	5	10	10
8	8	22	20
9	0	23	23
9	4	39	35
9	7	24	20
9	8	22	21
10	1	18	17
10	3	29	31
10	4	31	37
10	7	15	14
11	1	10	26
11	2	12	19
11	3	29	31
11	7	26	20
12	0	18	21
12	1	20	20
12	3	32	36
13	0	22	20
13	3	19	16
	H= 17		
0	1	39	33
0	5	49	54
0	7	19	24
0	9	46	49
1	3	25	24
1	6	37	37
1	8	23	22

K	L	FO	FC
2	1	31	22
2	3	21	24
2	4	13	22
2	5	41	46
2	9	29	35
3	2	41	38
3	3	18	18
3	4	25	23
3	6	53	54
3	8	61	65
3	10	25	21
4	2	30	26
4	3	34	40
4	4	18	19
4	6	19	22
5	1	17	19
5	2	74	74
5	6	50	48
5	8	45	46
5	10	22	19
6	1	46	52
6	5	50	48
6	9	35	39
7	4	17	13
8	3	37	37
8	5	35	36
8	9	30	33
9	6	34	34
10	3	19	23
11	2	43	41
11	4	18	21
11	6	38	35
	H= 18		
0	0	46	49
0	2	41	45
0	6	23	25
0	8	18	16
1	0	25	25
1	3	17	19
1	4	39	41
1	5	24	23
1	6	30	31
1	8	27	29
2	1	18	17
2	2	18	15
2	3	42	44
2	7	48	48
3	0	33	29
3	2	28	26
3	4	28	28
3	7	21	26
4	1	49	49
4	2	34	30
4	3	61	64

K	L	FO	FC
4	5	39	39
4	7	73	76
5	0	33	33
5	2	21	25
5	4	28	34
5	5	22	20
6	7	26	29
7	0	26	26
7	3	25	24
7	4	26	31
7	8	32	31
8	0	29	30
8	6	20	25
8	7	21	13
9	0	29	20
9	4	31	35
10	1	19	21
10	3	27	26
12	1	24	21
	H= 19		
0	3	57	56
0	9	24	29
1	1	52	53
1	2	23	27
1	5	30	32
1	9	30	32
2	2	44	44
2	3	29	26
2	4	34	30
2	5	34	35
2	6	28	26
2	8	30	29
2	9	22	22
3	1	26	23
3	2	44	49
3	6	38	41
3	8	31	30
4	6	19	18
4	8	31	30
5	2	43	41
5	4	19	14
5	6	37	40
5	8	26	28
6	1	28	25
6	2	46	47
6	3	18	22
6	5	39	38
6	6	26	25
7	1	33	31
7	9	27	31
9	2	19	17
9	3	24	22
10	2	27	25

K	L	FO	FC
	H= 20		
0	0	63	64
0	4	25	34
0	8	33	30
1	2	22	30
1	4	23	23
1	7	19	22
2	0	49	49
2	1	20	19
2	8	25	29
3	1	41	44
3	3	42	45
3	5	17	11
3	7	41	42
4	1	20	27
4	3	23	15
4	5	30	32
4	7	19	23
5	1	21	21
5	2	19	23
5	3	38	42
5	4	28	29
5	5	18	20
5	7	35	40
6	0	36	33
6	4	25	31
7	4	23	18
8	0	27	32
8	4	22	22
	H= 21		
0	1	20	21
1	1	37	38
1	3	25	29
1	5	28	20
1	7	19	21
2	2	55	57
2	6	33	36
4	2	49	52
4	6	25	24
5	4	21	16
6	2	27	35
6	3	18	18
7	1	38	34
7	3	24	24
	H= 22		
0	0	49	45
0	4	28	29
1	0	28	31
1	3	23	19
2	0	31	34
2	1	20	20

K	L	FO	FC
3	1	24	32
3	3	26	31
5	1	27	26
5	3	31	33
6	0	24	26
	H= 23		
0	1	20	26
2	1	20	22

Table D. Observed (FO) and Calculated (FC) Structure Factors for $[Co(Dapo)(DapoH)]C\ell_2 \cdot 2H_2O$.

K	L	FO	FC
	H=-18		
0	0	39	39
0	2	54	53
0	4	70	69
0	6	14	12
2	1	13	13
2	2	35	35
2	3	10	18
2	5	16	15
2	6	22	22
	H=-17		
1	0	55	57
1	1	53	52
1	2	39	40
1	6	30	30
1	7	16	14
1	8	30	28
3	0	22	22
3	1	17	13
3	2	46	47
3	4	30	35
3	7	14	12
	H=-16		
0	0	61	62
0	2	77	77
0	6	14	12
0	8	47	49
2	0	37	38
2	2	28	28
2	3	33	34
2	4	13	11
2	6	19	19
2	7	20	19
2	8	43	41
2	9	18	17
4	0	34	33
4	1	18	16
4	2	21	22
4	3	16	16
4	4	47	45
4	6	39	37
	H=-15		
1	2	41	40
1	3	13	12
1	4	45	44
1	5	25	25
1	8	37	37
1	9	29	26
1	10	39	39
3	0	75	76
3	2	40	38
3	3	24	24
3	5	14	11
3	6	55	54
3	8	54	53
5	0	45	44
5	1	32	32
5	2	26	26
5	4	26	25
5	5	15	16
5	6	42	42
	H=-14		
0	0	27	25
0	2	13	12
0	4	52	51
0	6	95	97
0	8	36	35
0	10	27	26
2	0	30	29
2	1	36	35
2	2	41	43
2	3	51	51
2	4	36	35
2	5	21	21
2	6	12	16
2	7	18	17
2	8	41	41
2	10	37	39
4	0	44	43
4	2	66	64
4	4	37	35
4	5	13	14
4	8	47	46
6	0	21	22
6	3	23	22
6	4	27	26
6	5	13	6
	H=-13		
1	0	56	57
1	2	54	54
1	3	56	58
1	4	40	47
1	6	47	46
1	8	59	59
1	9	20	21
1	10	31	29
3	0	18	17
3	2	41	41
3	4	72	74
3	5	42	45
3	6	39	39
3	9	17	15
3	10	37	37
5	0	21	23
5	1	17	17
5	2	24	23
5	3	37	36
5	4	40	37
5	5	16	16
5	6	32	30
5	7	27	27
5	8	19	22
7	2	29	29
	H=-12		
0	0	18	17
0	2	121	120
0	4	102	103
0	6	15	18
0	8	53	53
0	10	62	62
2	0	26	28
2	1	39	38
2	2	49	50
2	4	67	69
2	5	36	36
2	6	39	40
2	8	18	18
2	10	29	29
2	11	21	21
4	0	65	66
4	1	27	30
4	2	13	13
4	4	40	40
4	5	26	26
4	6	60	61
4	8	14	17
4	9	16	16
6	1	22	21
6	2	32	32
6	3	12	13
6	4	35	34
6	5	22	23
6	6	28	27
6	7	21	23
	H=-11		
1	0	31	34
1	1	21	24
1	2	53	55
1	4	165	103
1	5	48	48
1	6	44	45
1	7	54	55
1	9	15	16
1	10	42	43
1	11	18	17
3	0	16	16
3	1	14	12
3	2	90	90
3	3	16	19
3	4	54	55
3	6	22	21
3	8	65	63
3	10	33	34
5	0	54	55
5	2	60	59
5	3	45	43
5	4	32	32
5	5	19	17
5	6	29	27
5	7	17	14
5	8	35	35
5	9	15	17
7	0	23	23
7	1	12	11
7	2	15	10
7	4	48	47
7	6	46	46
	H=-10		
0	0	125	129
0	2	51	47
0	4	41	41
0	6	24	25
0	8	47	48
0	10	25	26
0	12	46	44
2	0	12	14
2	1	45	46
2	2	76	74
2	3	45	45
2	4	86	84
2	5	74	72
2	6	38	36
2	7	11	13
2	8	15	13
2	9	29	27
2	10	46	46
4	0	19	19
4	2	109	107
4	3	15	18
4	4	98	130
4	5	21	23
4	6	27	30
4	7	14	12
4	10	59	60
6	0	56	55
6	1	26	26
6	2	25	28
6	5	22	20
6	6	29	29
6	8	50	49
8	0	57	58
8	2	32	31
8	3	15	13
8	4	17	17
	H= -9		
1	0	38	39
1	1	11	12
1	2	133	135
1	3	34	32
1	4	55	55
1	5	43	43
1	7	24	22
1	8	33	33
1	9	22	25
1	10	62	63
1	11	24	25
1	12	34	34
3	0	74	76
3	1	11	18
3	2	15	16
3	3	24	22
3	4	83	84
3	5	16	16
3	6	74	72
3	7	48	54
3	8	30	34
3	10	37	36
5	0	88	87
5	1	41	42
5	2	73	74
5	3	22	21
5	4	58	59
5	5	22	21
5	6	38	37
5	7	27	28
5	8	22	22
5	10	32	30
7	0	19	20
7	2	71	71
7	4	12	11
	H= -8		
0	0	58	55
0	2	9	12
0	4	149	153
0	6	46	43
0	10	84	83
0	12	62	62
2	0	53	54
2	1	36	35
2	2	48	49
2	3	41	39
2	4	41	41
2	5	15	10
2	6	52	52
2	7	13	13
2	8	55	55
2	9	22	21
2	10	45	46
2	12	33	32
4	0	112	119
4	2	102	104
4	3	44	45
4	4	9	11
4	6	48	51
4	7	16	16
4	8	66	65
4	9	13	12
4	10	16	16
6	0	32	35
6	1	41	41
6	2	23	22
6	3	52	51
6	4	43	42
6	5	26	25
6	6	22	21
6	7	20	20
6	8	22	22
6	9	33	32
8	0	30	31
8	2	37	36
8	4	47	46
	H= -7		
1	0	120	120
1	1	75	71
1	2	21	20
1	3	8	8
1	4	69	89
1	5	37	42
1	6	119	118
1	7	46	45
1	8	54	56
1	9	35	36
1	10	20	21
1	11	17	16
1	12	49	47
3	0	22	21
3	1	12	9
3	2	34	37
3	3	9	5
3	4	28	31
3	5	53	52
3	6	15	14
3	7	12	14
3	8	41	41
3	10	78	78
3	12	18	23
5	0	49	51
5	1	28	31
5	2	75	75
5	3	45	46
5	4	55	56
5	5	47	44
5	6	35	32
5	7	35	35
5	8	35	34
5	10	25	25
7	0	66	69
7	2	15	13
7	3	14	12
7	5	16	16
7	6	55	55
7	7	17	18
7	8	49	49
	H= -6		
0	0	136	132
0	2	146	152
0	4	34	36
0	6	110	112
0	8	70	67
0	10	31	33
2	0	50	52
2	1	15	15
2	2	31	25
2	3	92	95
2	4	81	76
2	5	16	13
2	6	65	84
2	7	76	78
2	8	50	50
2	9	35	36
2	10	36	36
2	11	27	25
2	12	42	40
4	0	47	49
4	1	36	35
4	2	11	11
4	3	14	12
4	4	107	112
4	5	9	9
4	6	75	76
4	7	23	23
4	8	26	26
4	10	25	24
6	0	29	28
6	1	17	16
6	2	55	52
6	3	13	13
6	5	12	11
6	6	33	30
6	8	44	45
6	9	13	14
8	0	66	65
8	2	76	74
8	3	16	16
8	4	21	20
8	6	30	29
	H= -5		
1	0	29	31
1	1	81	77
1	2	15	18
1	3	73	64
1	4	197	188
1	5	78	76
1	6	87	85
1	7	29	30
1	8	32	31
1	9	14	12
1	10	31	30
1	11	31	30
1	12	29	29
3	0	110	110
3	1	71	81
3	2	33	32
3	4	26	25
3	5	18	18
3	6	110	110
3	7	20	16
3	8	55	54
3	9	20	17
3	10	18	18
3	12	46	45
5	0	45	46
5	1	47	46
5	2	45	45
5	3	18	17
5	4	68	69
5	5	19	18
5	6	87	90
5	8	54	54
5	9	34	37
5	10	14	18
7	1	21	22
7	2	41	43
7	4	71	71
7	5	17	18
7	7	12	13
7	8	22	23
9	0	37	38
9	1	16	18
9	2	42	43

Table D. (continued)

K	L	FO	FC
	H= -4		
0	0	56	72
0	2	46	57
0	4	81	85
0	6	166	172
0	10	19	18
0	12	56	55
2	0	40	49
2	1	150	136
2	2	36	39
2	3	21	27
2	4	103	99
2	5	19	14
2	6	79	79
2	7	30	30
2	8	34	36
2	9	21	22
2	10	29	31
2	11	26	26
2	12	41	41
4	0	86	81
4	1	94	94
4	2	139	135
4	4	111	112
4	5	12	7
4	6	46	46
4	7	18	18
4	8	70	71
4	9	13	13
4	10	49	49
4	11	21	21
6	0	20	19
6	1	63	63
6	2	16	16
6	3	43	47
6	4	36	39
6	5	30	32
6	6	58	58
6	7	27	26
6	8	25	25
6	10	17	16
8	0	43	42
8	1	16	15
8	2	37	37
8	3	22	22
8	4	47	48
8	6	40	40
	H= -3		
1	0	131	133
1	1	67	59
1	2	50	45
1	3	84	76
1	4	46	35
1	6	111	111
1	7	22	19
1	8	64	62
1	9	40	40
1	10	20	22
1	12	30	31
3	0	33	31
3	1	51	38
3	2	91	89
3	3	16	22
3	4	152	153
3	5	24	19
3	6	40	42
3	7	48	47
3	8	9	6
3	9	10	9
3	10	25	27
3	12	62	61
5	0	41	40
5	1	22	23
5	2	64	67
5	3	12	16
5	4	97	97
5	5	65	67
5	6	69	70
5	7	34	34
5	8	41	42
5	9	26	27
5	10	39	39
7	0	65	62
7	1	44	44
7	2	65	63
7	5	20	20
7	6	29	29
7	8	41	42
9	0	25	25
9	2	41	42
9	3	25	26
9	4	35	35
	H= -2		
0	0	147	142
0	2	198	179
0	4	148	147
0	8	77	77
0	10	63	62
0	12	40	41
2	0	73	80
2	1	191	196
2	2	67	63
2	3	51	45
2	4	48	51
2	5	65	67
2	6	84	86
2	7	15	18
2	8	33	34
2	9	49	51
2	10	28	28
2	11	23	22
2	12	47	46
4	0	169	164
4	2	69	68
4	3	22	26
4	4	49	48
4	6	109	111
4	7	24	24
4	8	25	25
4	10	14	12
6	0	24	25
6	1	17	22
6	2	64	67
6	3	12	12
6	4	55	54
6	5	22	22
6	7	25	23
6	8	30	30
8	0	11	8
8	1	34	34
8	2	76	79
8	3	17	15
8	4	76	71
8	5	29	27
8	6	15	16
	H= -1		
1	0	161	159
1	1	21	33
1	2	96	82
1	3	161	156
1	4	63	71
1	5	59	58
1	6	117	117
1	7	46	47
1	8	40	41
1	10	52	52
1	12	56	55
3	0	194	183
3	1	24	20
3	2	131	131
3	3	67	57
3	4	34	34
3	5	15	19
3	6	72	72
3	9	35	34
3	10	18	19
5	0	83	84
5	1	44	45
5	2	79	80
5	3	107	105
5	4	27	26
5	5	22	23
5	6	26	27
5	7	22	22
5	8	52	53
5	10	46	45
7	0	16	14
7	1	23	22
7	2	30	30
7	3	12	11
7	4	68	67
7	6	51	49
7	7	15	13
9	0	39	40
9	1	18	18
9	2	50	52
9	4	48	48
	H= 0		
0	2	163	162
0	6	103	100
0	8	103	100
0	10	16	14
0	12	22	21
2	0	48	50
2	1	21	23
2	2	47	50
2	3	89	88
2	4	22	22
2	5	37	37
2	6	61	64
2	7	34	32
2	8	69	70
2	9	43	43
2	10	42	44
2	12	27	29
4	0	22	16
4	1	20	20
4	2	118	116
4	3	26	25
4	4	79	79
4	5	32	34
4	6	28	28
4	7	22	24
4	8	35	37
4	9	38	37
4	10	65	64
4	11	14	14
6	0	95	112
6	1	36	38
6	2	37	37
6	3	25	27
6	4	14	16
6	5	49	49
6	6	24	25
6	8	35	34
6	9	29	28
8	0	58	60
8	2	40	40
8	3	21	18
8	4	38	39
8	5	19	18
8	6	51	52
	H= 1		
1	1	17	24
1	2	164	163
1	3	31	27
1	4	12	6
1	5	29	27
1	6	26	25
1	7	16	15
1	8	99	103
1	10	44	44
1	11	44	43
3	1	19	26
3	2	26	26
3	3	23	26
3	4	47	50
3	5	40	33
3	6	123	123
3	7	18	21
3	8	46	45
3	9	23	21
3	10	22	24
5	1	31	29
5	2	45	44
5	3	32	33
5	4	46	46
5	6	55	56
5	7	38	39
5	8	49	48
5	10	46	44
7	2	78	77
7	3	34	34
7	4	35	32
7	5	28	28
7	7	16	13
7	8	43	44
9	2	35	35
9	3	31	32
9	4	40	41
	H= 2		
0	2	132	125
0	4	111	111
0	6	89	86
0	8	11	7
0	10	44	41
2	1	15	17
2	2	25	15
2	3	102	91
2	4	19	17
2	5	71	73
2	6	58	59
2	7	23	22
2	8	88	93
2	9	22	20
2	10	31	32
4	2	111	105
4	4	30	30
4	5	15	16
4	6	73	75
4	8	106	108
4	9	13	13
4	10	23	22
6	1	14	9
6	2	41	41
6	3	11	11
6	4	66	66
6	5	25	26
6	6	42	43
6	9	22	22
8	3	30	31
8	4	52	52
8	5	13	13
8	6	37	34
	H= 3		
1	1	94	90
1	2	27	19
1	4	44	39
1	5	89	89
1	6	88	90
1	7	24	26
1	8	73	74
3	1	12	8
3	2	157	157
3	3	45	49
3	4	56	58
3	5	35	39
3	6	45	45
3	7	19	19
3	8	54	55
3	10	53	54
3	11	26	26
5	1	46	47
5	2	73	73
5	3	28	27
5	4	74	77
5	5	68	72
5	6	50	49
5	8	39	38
7	2	13	17
7	3	13	14
7	4	28	29
7	5	12	13
7	6	59	58
9	1	15	16
9	2	33	32
	H= 4		
0	2	315	299
0	4	67	63
0	6	84	83
0	8	104	103
0	10	27	27
2	1	16	14
2	2	23	18
2	4	38	41
2	6	39	40
2	7	41	39
2	8	46	44
2	9	18	14
2	10	35	37
2	11	15	14
4	1	15	15
4	2	21	21
4	3	65	59
4	4	125	127
4	6	72	71
4	7	30	32
4	9	15	13
4	10	20	21
6	1	19	19
6	2	68	69
6	3	38	37
6	4	38	37
6	5	14	11
6	6	42	42
6	7	48	47
6	8	32	33
8	2	47	48
8	4	24	22
	H= 5		
1	1	58	63
1	2	144	134
1	4	135	137
1	5	53	54
1	6	34	35
1	8	36	36
1	9	21	23
1	10	57	57
3	1	53	52
3	2	107	105
3	3	59	56
3	4	17	17
3	5	15	13
3	6	58	57
3	7	17	15
3	8	54	53
3	9	15	15
5	1	52	50
5	2	39	42
5	4	41	41
5	5	26	28
5	6	47	48
5	7	33	33
5	8	28	28
5	9	26	25
7	1	17	17
7	2	37	39
7	4	74	75
7	6	18	19
9	1	37	36
9	2	37	36
	H= 6		
0	2	91	89
0	4	133	141
0	6	95	96
0	8	49	50
0	10	20	19
2	1	62	63
2	2	129	122
2	3	36	36
2	4	41	39
2	5	17	17
2	7	71	72
2	8	25	25
2	10	45	44
4	1	9	9
4	2	134	139
4	4	55	54
4	6	13	11
4	8	44	43
6	1	38	36
6	4	53	52
6	5	18	18
6	6	49	48
6	7	17	15
8	2	26	27
8	3	21	20
8	4	43	42
	H= 7		
1	1	52	52
1	2	150	144
1	3	54	54
1	5	14	16
1	6	24	22
1	8	49	58

Table D. (concluded)

K	L	FO	FC
1	9	24	26
1	10	39	38
3	1	44	44
3	2	71	70
3	3	12	18
3	4	125	129
3	5	18	18
3	6	13	16
3	8	18	18
3	9	14	12
5	1	19	20
5	2	44	45
5	3	37	37
5	4	50	49
5	6	34	34
5	7	30	29
5	8	30	30
7	2	54	54
	H= 8		
0	2	109	117
0	4	87	90
0	6	19	24
0	8	58	58
2	1	81	83
2	2	71	71
2	3	21	21
2	4	30	28
2	5	22	21
2	6	16	16
2	8	24	24
4	1	79	78
4	2	66	67
4	4	32	34
4	5	23	24
4	6	79	80
4	8	44	42
6	1	34	35
6	2	40	37
6	3	13	13
6	4	37	35
6	5	26	24
8	1	17	18
8	2	46	45
	H= 9		
1	1	31	31
1	2	38	39
1	3	52	52
1	4	57	55
1	5	10	7
1	6	35	34
1	7	35	36
1	8	22	23
3	1	41	42
3	2	82	83
3	3	30	27
3	4	34	34
3	5	27	26
3	6	25	30
3	8	63	62
5	2	68	64
5	3	46	46
5	4	25	24
5	5	18	18
5	6	21	21
5	7	18	19
7	1	14	16
7	4	35	36
	H= 10		
0	2	54	55
0	4	20	20
0	6	79	78
0	8	63	62
2	1	31	28
2	2	33	31
2	4	52	50
2	5	60	62
2	6	26	26
2	7	14	8
2	8	27	29
4	1	17	15
4	2	59	59
4	3	17	16
4	4	77	77
4	6	18	19
6	2	13	12
6	3	14	11
	H= 11		
1	1	34	38
1	2	78	78
1	3	31	31
1	4	73	72
1	6	19	21
1	8	42	41
3	1	12	10
3	2	20	20
3	3	15	16
3	4	35	35
3	6	76	75
3	7	13	13
5	1	42	41
5	2	30	28
5	3	29	27
5	4	33	33
5	5	19	19
7	1	19	19
7	2	44	43
	H= 12		
0	2	57	56
0	4	109	111
0	6	56	56
2	1	11	14
2	2	23	20
2	3	41	40
2	4	42	42
2	5	19	18
2	6	33	34
4	2	42	43
4	3	27	26
4	4	27	26
6	2	21	19
6	3	16	16
	H= 13		
1	1	32	31
1	2	20	21
1	3	19	13
1	4	56	56
1	5	17	18
1	6	48	50
3	1	16	21
3	2	54	54
3	4	45	46
3	5	13	12
5	1	35	36
5	2	52	52
	H= 14		
0	2	68	68
0	4	33	33
2	2	29	29
2	3	43	44
2	4	39	41
4	1	15	13
4	2	27	29
4	4	69	68
	H= 15		
1	1	27	29
1	2	37	38
1	4	51	52
3	1	12	13
3	2	29	28
5	1	14	11
	H= 16		
2	2	38	37
	H= 17		
1	2	34	35

Table E. Observed (FO) and Calculated (FC) Structure Factors for $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.

K	L	FO	FC
	H=-14		
0	4	38	26
1	1	40	39
1	3	41	34
1	4	38	34
1	6	41	32
2	0	64	66
2	5	43	46
2	7	72	64
2	8	38	20
3	4	41	37
3	6	40	38
3	7	38	33
4	1	69	60
4	3	41	39
	H=-13		
0	2	117	112
0	6	40	29
0	8	75	56
0	10	46	26
0	12	117	98
1	0	35	27
1	2	46	41
1	4	55	54
1	5	57	54
1	8	70	67
1	9	54	51
1	11	76	59
2	1	37	37
2	3	70	67
2	4	71	78
2	5	86	81
2	9	40	42
2	11	58	42
2	12	40	27
2	13	45	22
3	0	37	30
3	1	83	81
3	2	65	66
3	9	43	38
4	1	63	67
4	5	59	52
5	0	39	36
5	2	42	35
5	5	40	39
5	6	56	57
5	8	37	31
5	9	36	27
6	4	96	98
6	5	46	36
6	6	52	53
6	8	39	33
7	3	45	55

K	L	FO	FC
	H=-12		
0	0	120	119
0	2	47	53
0	4	89	92
0	6	74	69
0	8	41	39
0	10	46	35
0	12	51	36
0	14	44	34
1	0	66	72
1	1	90	96
1	3	63	64
1	7	70	58
1	12	67	63
2	2	42	43
2	3	33	30
2	4	61	67
2	5	76	72
2	7	121	113
2	8	89	82
2	9	80	75
2	10	50	44
3	5	95	90
3	6	70	65
3	8	38	36
3	9	57	48
3	10	44	44
3	11	49	45
3	14	48	31
4	0	34	38
4	1	107	114
4	2	54	57
4	5	50	49
4	8	47	38
4	9	47	47
4	14	45	35
5	0	39	46
5	2	52	57
5	4	41	48
5	9	70	65
5	12	61	60
5	13	72	64
6	2	64	66
6	3	71	79
6	4	39	30
6	8	74	70
6	11	50	38
7	1	51	51
8	2	53	55
8	6	39	35
	H=-11		
0	0	48	62
0	2	84	83

K	L	FO	FC
0	4	33	28
0	6	58	53
0	8	70	58
0	10	94	81
0	15	38	0
1	2	46	49
1	3	52	46
1	4	61	61
1	5	41	44
1	10	69	62
1	11	36	29
1	16	42	34
2	0	59	69
2	2	54	66
2	3	163	169
2	4	49	53
2	6	111	105
2	7	33	22
2	9	78	73
2	11	89	74
2	13	43	33
2	15	41	33
3	0	82	91
3	1	85	91
3	2	57	60
3	3	52	53
3	6	65	67
3	7	61	57
3	10	57	44
3	11	54	52
3	12	35	40
3	13	74	63
3	14	46	43
3	15	34	16
3	17	50	44
4	0	80	84
4	2	40	49
4	5	62	61
4	8	61	49
4	9	46	45
4	13	53	49
4	14	64	47
4	16	43	37
5	0	62	64
5	4	81	78
5	5	54	56
5	6	48	56
5	9	74	72
5	10	86	83
5	12	37	26
5	13	38	35
6	3	38	38
6	4	56	59
6	7	121	120
6	9	37	40
6	11	36	34

K	L	FO	FC
6	12	68	64
7	1	84	85
7	2	37	34
7	3	54	56
7	6	37	38
7	12	36	28
8	0	64	63
8	1	56	57
8	2	57	60
8	4	80	83
8	6	82	83
9	0	80	93
9	1	40	27
9	5	64	59
9	9	41	43
10	2	46	54
10	4	36	35
	H=-10		
0	0	213	236
0	4	120	117
0	6	54	56
0	8	46	42
0	10	73	71
0	12	89	71
0	14	97	86
0	16	99	88
0	18	90	76
1	0	154	176
1	1	32	20
1	2	47	54
1	3	88	87
1	4	38	38
1	6	33	22
1	7	42	33
1	8	42	40
1	9	62	65
1	11	44	39
1	12	42	40
1	13	52	51
1	14	77	63
1	15	62	50
1	18	44	31
2	1	39	43
2	2	72	74
2	4	47	47
2	7	203	193
2	8	36	27
2	9	69	61
2	12	38	37
2	16	47	42
3	2	62	76
3	3	126	138
3	4	73	78
3	5	77	73

K	L	FO	FC
3	6	55	56
3	7	47	47
3	9	65	61
3	10	87	80
3	11	96	82
3	13	77	67
3	14	58	46
3	16	53	38
3	17	51	43
4	0	77	81
4	1	78	86
4	5	43	46
4	6	53	56
4	7	54	51
4	8	36	43
4	9	64	67
4	10	43	45
4	14	40	36
4	15	36	35
5	0	108	113
5	1	93	99
5	2	89	92
5	3	37	21
5	4	53	57
5	5	39	47
5	6	73	73
5	7	39	52
5	14	63	58
5	17	46	32
6	1	38	38
6	2	40	32
6	3	159	166
6	5	45	44
6	8	91	95
6	10	60	55
6	11	86	79
6	15	40	28
7	0	44	40
7	2	38	31
7	5	69	67
7	8	33	16
7	11	50	46
7	14	54	37
7	15	50	41
8	0	48	54
8	2	38	41
8	4	90	91
8	5	49	49
8	6	63	61
8	8	109	109
8	9	37	33
8	10	40	49
8	11	41	34
9	1	53	60
9	3	75	75
9	4	84	84

K	L	FO	FC
9	5	36	46
9	7	36	37
9	8	36	34
9	10	64	59
9	12	44	36
10	0	58	53
10	4	50	48
10	6	105	105
10	8	41	42
11	1	55	61
11	4	58	54
	H= -9		
0	0	128	145
0	2	85	91
0	4	185	199
0	6	160	169
0	8	222	203
0	10	61	58
0	12	131	117
0	18	77	70
0	20	52	38
1	0	40	46
1	2	59	69
1	3	35	36
1	4	153	155
1	5	107	116
1	6	35	35
1	7	83	85
1	9	91	94
1	10	47	39
1	11	134	125
2	0	27	24
2	1	27	22
2	2	38	28
2	3	135	141
2	5	99	106
2	7	53	38
2	11	191	182
2	14	45	30
2	15	48	47
3	0	66	76
3	1	125	144
3	2	101	110
3	3	67	72
3	5	96	102
3	6	59	57
3	8	48	53
3	9	35	27
3	10	51	49
3	13	40	36
3	14	83	76
3	15	109	99
3	16	77	65
4	0	80	86

K	L	FO	FC
4	1	43	50
4	2	47	54
4	3	32	34
4	5	48	51
4	11	54	51
4	12	37	37
4	13	46	44
4	18	75	66
4	19	61	54
5	0	41	39
5	1	115	115
5	2	43	41
5	4	65	64
5	5	62	62
5	6	48	53
5	7	30	24
5	10	98	103
5	13	52	49
5	17	68	59
5	18	44	31
6	0	116	118
6	1	47	44
6	4	36	42
6	5	34	41
6	6	118	119
6	7	158	159
6	8	70	56
6	9	39	37
6	10	33	31
6	15	65	57
7	0	76	85
7	2	45	45
7	3	178	186
7	4	68	67
7	5	47	51
7	7	32	21
7	11	60	54
8	0	112	113
8	1	79	82
8	3	43	31
8	4	80	80
8	6	36	24
8	7	85	79
8	8	58	62
8	10	54	42
8	12	74	68
8	13	47	40
8	14	83	77
9	0	103	107
9	2	50	56
9	7	54	57
9	8	43	31
9	9	43	51
9	10	63	62
9	14	71	63
10	1	41	37

K	L	FO	FC
10	2	67	65
10	6	57	52
10	7	54	68
10	9	36	28
10	10	74	70
11	0	87	81
11	1	55	49
11	2	63	68
11	3	47	44
11	4	50	44
11	5	37	38
11	6	40	37
	H= -8		
0	0	258	282
0	2	66	76
0	4	85	86
0	6	80	85
0	8	166	165
0	10	36	12
0	12	79	66
0	14	98	90
0	16	116	103
1	0	75	83
1	1	67	74
1	2	159	179
1	3	177	194
1	4	62	67
1	5	31	35
1	6	30	26
1	7	62	55
1	8	87	82
1	9	49	58
1	10	47	41
1	13	55	52
1	14	72	62
1	15	35	27
1	19	44	38
1	20	37	28
2	0	89	103
2	1	40	27
2	3	47	35
2	4	91	94
2	5	55	59
2	7	217	225
2	8	47	49
2	9	154	161
2	10	113	108
2	11	53	50
2	12	60	54
2	13	39	34
2	15	98	85
3	0	37	51
3	1	151	162
3	2	41	43

Table E. (continued)

K	L	FO	FC
3	3	88	93
3	4	90	98
3	5	140	142
3	6	80	86
3	7	95	96
3	8	43	37
3	9	114	109
3	10	98	99
3	11	30	18
3	13	56	50
3	14	43	38
3	16	38	19
3	17	38	26
3	18	70	65
3	19	38	35
4	0	107	113
4	1	133	142
4	3	35	36
4	4	119	131
4	5	30	31
4	8	41	41
4	10	50	47
4	14	42	42
4	16	47	37
4	17	80	81
4	18	76	74
5	1	74	74
5	2	155	159
5	4	46	41
5	5	131	135
5	6	38	41
5	7	59	61
5	8	79	77
5	9	66	64
5	11	30	16
5	12	51	57
5	13	60	60
5	14	131	127
5	15	79	69
5	18	41	31
6	2	83	79
6	3	93	97
6	4	36	36
6	5	62	65
6	6	153	152
6	8	50	47
6	9	32	29
6	10	52	57
6	11	181	178
6	13	48	46
6	15	58	50
6	17	43	39
7	1	64	65
7	2	52	47
7	3	130	129
7	4	51	53

K	L	FO	FC
7	7	79	74
7	9	56	48
7	10	41	29
7	11	40	40
8	4	80	80
8	6	74	72
8	8	108	104
8	12	112	112
8	13	45	41
8	16	62	62
8	17	50	43
9	1	42	45
9	2	43	40
9	3	43	34
9	4	121	120
9	8	58	52
9	10	62	65
9	13	75	74
10	0	72	74
10	3	41	43
10	6	82	83
10	8	65	63
10	9	37	46
10	10	77	74
11	0	60	58
11	1	41	46
11	2	47	48
11	3	95	100
11	4	65	65
11	5	58	51
11	6	88	85
11	7	46	42
11	9	38	28
12	2	42	38
12	3	68	62
12	7	42	36
	H= -7		
0	0	49	56
0	2	132	146
0	4	213	230
0	6	101	106
0	12	226	221
0	16	61	52
0	18	108	97
0	20	146	130
0	22	48	42
1	0	34	36
1	1	44	52
1	2	81	91
1	4	81	87
1	5	42	42
1	6	135	146
1	7	92	100
1	8	36	31

K	L	FO	FC
1	9	48	52
1	10	90	89
1	14	71	66
1	15	32	29
1	17	79	73
1	18	39	33
1	19	38	30
1	21	43	42
2	0	90	94
2	1	97	111
2	2	65	74
2	3	121	135
2	4	65	66
2	5	152	166
2	6	99	99
2	7	55	54
2	9	67	67
2	10	99	106
2	11	203	202
2	13	88	79
2	17	64	55
2	19	59	52
2	20	46	34
3	0	75	75
3	1	147	156
3	2	220	237
3	3	258	273
3	4	64	72
3	5	60	57
3	6	143	153
3	7	66	73
3	8	75	85
3	10	86	89
3	11	57	59
3	13	156	146
3	14	86	86
3	19	48	40
4	0	178	183
4	1	110	115
4	2	67	68
4	3	91	87
4	4	100	104
4	5	61	57
4	6	96	101
4	7	45	41
4	8	31	29
4	10	56	53
4	11	35	38
4	12	40	44
4	14	51	54
4	15	38	44
4	16	81	83
4	17	62	61
4	18	54	50
4	21	39	29
5	1	130	132

K	L	FO	FC
5	2	31	28
5	4	70	69
5	5	191	191
5	6	187	190
5	7	57	54
5	8	29	11
5	9	176	174
5	10	149	148
5	11	45	47
5	14	39	37
5	18	43	37
6	2	31	33
6	3	125	124
6	4	107	110
6	5	74	81
6	6	122	121
6	7	172	170
6	9	152	150
6	10	141	139
6	12	45	43
6	13	88	83
6	14	62	59
6	15	80	83
7	1	95	92
7	3	110	113
7	7	46	46
7	8	79	77
7	9	46	41
7	10	31	24
7	11	51	43
7	12	38	37
7	13	46	44
7	15	42	39
8	0	126	126
8	1	32	22
8	2	122	122
8	3	110	106
8	4	71	65
8	8	94	92
8	10	46	40
8	12	100	94
8	16	78	71
8	17	62	62
9	0	36	31
9	1	36	39
9	2	125	126
9	4	36	27
9	5	99	106
9	6	45	41
9	7	48	50
9	8	62	53
9	9	63	62
9	11	45	54
9	14	61	59
9	15	37	42
10	1	40	40

K	L	FO	FC
10	2	68	82
10	6	103	105
10	8	64	64
10	10	99	100
10	12	40	37
10	14	36	24
10	15	48	48
11	2	142	146
11	5	88	88
11	6	43	37
11	7	86	85
11	9	82	89
11	12	50	54
12	1	96	100
12	3	70	71
12	5	71	67
12	8	61	59
12	9	38	41
13	2	62	65
13	4	40	45
13	5	61	68
	H= -6		
0	0	352	391
0	2	27	24
0	4	63	72
0	6	76	99
0	8	288	211
0	10	115	119
0	12	88	90
0	14	56	50
0	16	236	224
0	18	112	104
1	0	24	25
1	1	69	82
1	2	148	173
1	3	69	66
1	4	42	44
1	6	64	70
1	7	67	70
1	10	68	67
1	11	46	38
1	12	87	85
1	13	127	131
1	14	96	86
1	15	66	80
1	20	58	45
2	1	177	200
2	2	161	172
2	3	210	244
2	4	54	61
2	5	129	143
2	6	25	27
2	7	170	183
2	8	58	68

K	L	FO	FC
2	9	228	249
2	11	79	79
2	12	36	33
2	14	70	65
2	15	100	102
2	21	48	41
3	1	107	119
3	2	74	77
3	3	78	77
3	4	26	36
3	5	181	198
3	6	217	232
3	7	104	100
3	9	267	273
3	10	107	112
3	11	59	60
3	12	36	38
3	13	37	33
3	14	55	52
3	15	38	34
3	16	33	31
3	17	76	72
3	18	41	40
4	0	101	100
4	1	167	167
4	2	117	124
4	3	125	126
4	4	50	46
4	5	144	139
4	6	122	119
4	7	30	23
4	9	51	43
4	10	53	48
4	12	131	131
4	13	58	56
4	15	53	56
4	20	49	38
4	21	49	41
5	1	107	109
5	2	310	305
5	3	137	142
5	5	73	75
5	6	27	16
5	7	127	124
5	8	53	53
5	9	91	89
5	10	98	92
5	11	39	38
5	12	58	61
5	13	56	59
5	14	115	119
6	0	40	41
6	2	46	48
6	3	169	169
6	5	153	152
6	6	40	35

K	L	FO	FC
6	7	37	33
6	8	152	156
6	9	36	33
6	10	139	133
6	11	90	90
6	12	35	35
6	13	80	80
6	14	80	77
6	17	84	80
6	19	63	61
7	1	58	65
7	2	61	62
7	3	28	16
7	5	53	47
7	7	80	76
7	9	38	43
7	10	53	52
7	12	72	72
7	13	111	110
7	14	35	34
7	15	39	40
7	17	84	82
7	19	38	22
8	0	186	183
8	2	98	95
8	3	95	84
8	4	188	189
8	6	68	67
8	7	52	41
8	8	89	90
8	9	50	41
8	10	46	49
8	12	53	54
8	15	58	53
8	16	60	50
8	17	92	87
9	0	99	101
9	1	130	132
9	2	48	47
9	3	81	87
9	6	206	198
9	7	43	44
9	9	50	49
9	10	58	55
9	11	38	36
9	13	39	35
9	14	41	44
10	2	46	52
10	4	108	106
10	6	161	164
10	7	52	45
10	8	33	30
10	10	76	73
10	11	52	61
11	1	77	80
11	3	90	90

K	L	FO	FC
11	4	35	48
11	6	135	132
11	8	74	78
11	10	104	104
11	13	85	83
12	0	43	40
12	2	64	69
12	9	65	60
12	11	43	43
12	12	39	33
13	1	58	61
13	2	55	68
13	3	59	62
13	9	63	65
14	3	72	84
	H= -5		
0	0	96	118
0	2	372	434
0	4	279	314
0	6	188	193
0	8	329	353
0	10	57	47
0	12	166	160
0	14	58	57
0	20	137	131
1	0	104	122
1	1	37	46
1	2	130	149
1	4	32	32
1	5	224	252
1	6	155	188
1	7	119	123
1	9	95	98
1	10	28	35
1	11	69	78
1	12	98	99
1	13	79	76
1	14	33	28
1	15	31	38
1	16	45	45
1	17	48	58
2	0	61	70
2	1	47	58
2	2	31	38
2	3	141	149
2	4	58	66
2	5	264	298
2	6	88	95
2	7	74	77
2	9	174	195
2	10	32	46
2	11	141	147
2	12	62	63
2	13	144	147

Table E. (continued)

K	L	FO	FC
2	14	40	36
2	15	50	61
2	17	77	75
2	18	36	41
2	19	52	54
2	20	44	42
2	21	38	32
2	22	40	36
3	1	272	283
3	2	238	244
3	3	59	49
3	4	29	21
3	5	45	33
3	6	57	61
3	7	113	119
3	8	51	54
3	9	79	81
3	10	151	155
3	11	147	148
3	12	44	47
3	13	150	150
3	14	138	144
3	15	70	73
3	17	35	38
3	18	54	57
3	22	37	22
4	0	94	90
4	1	111	106
4	2	125	127
4	3	45	46
4	4	114	117
4	5	51	48
4	6	27	4
4	7	91	88
4	8	50	46
4	9	95	92
4	11	57	53
4	14	90	86
4	16	51	56
4	17	59	57
4	19	88	83
4	20	73	74
5	1	51	52
5	2	71	68
5	3	53	49
5	6	253	247
5	7	110	109
5	9	81	78
5	11	59	60
5	12	76	77
5	13	85	86
5	14	33	33
5	15	41	37
5	16	56	52
5	17	89	87
5	18	75	73

K	L	FO	FC
5	19	42	39
6	0	40	35
6	1	146	139
6	2	92	85
6	3	244	237
6	4	52	58
6	5	67	65
6	6	122	116
6	7	145	144
6	8	135	126
6	9	130	128
6	10	66	63
6	11	44	38
6	12	63	70
6	15	41	40
6	16	58	58
6	17	62	58
6	18	46	42
6	19	35	25
6	21	81	73
7	0	86	84
7	1	141	136
7	2	37	29
7	3	137	133
7	4	92	85
7	5	131	126
7	7	66	60
7	8	32	31
7	9	68	64
7	10	84	81
7	11	48	47
7	12	52	47
7	13	122	114
7	14	36	37
8	0	196	194
8	1	117	112
8	2	67	68
8	3	174	171
8	4	147	147
8	8	77	78
8	9	118	103
8	10	107	101
8	12	46	44
8	15	86	81
8	16	89	96
9	0	52	54
9	2	152	146
9	3	47	58
9	4	33	41
9	5	90	86
9	6	106	109
9	7	40	39
9	8	40	40
9	9	36	39
9	10	76	73
9	11	42	41

K	L	FO	FC
9	12	75	79
9	13	40	45
9	14	96	97
10	3	137	135
10	4	137	141
10	5	32	20
10	7	53	49
10	8	57	59
10	9	37	47
10	10	78	76
10	14	91	93
11	0	113	114
11	1	37	27
11	2	96	97
11	5	51	48
11	6	65	70
11	7	60	64
11	9	61	61
11	10	105	106
11	11	40	24
11	14	74	83
12	0	80	96
12	3	79	82
12	4	37	38
12	13	44	39
13	1	38	34
13	2	90	97
13	3	46	46
13	5	73	72
13	7	49	53
13	10	45	41
14	1	40	33
14	2	48	53
14	3	88	92
14	4	46	33
14	7	102	111

H= -4

K	L	FO	FC
0	0	478	547
0	2	269	309
0	4	417	473
0	6	36	37
0	8	114	126
0	10	77	77
0	12	57	56
0	14	40	45
0	16	113	106
1	0	232	279
1	1	257	313
1	2	131	148
1	3	151	173
1	4	34	14
1	5	73	86
1	6	97	112
1	7	97	107

K	L	FO	FC
1	8	63	74
1	9	25	18
1	10	115	123
1	11	36	35
1	12	48	45
1	13	68	70
1	14	105	115
1	15	49	44
1	16	106	104
1	18	39	39
1	21	72	64
2	0	110	119
2	1	78	74
2	2	90	91
2	3	127	117
2	4	69	69
2	5	31	23
2	6	40	49
2	7	167	191
2	9	279	301
2	10	85	92
2	11	70	76
2	12	47	48
2	13	76	77
2	14	30	29
2	17	58	54
2	18	41	43
2	22	53	53
3	0	139	135
3	1	94	83
3	2	76	82
3	3	38	38
3	4	105	107
3	5	327	323
3	6	198	199
3	7	140	136
3	8	94	90
3	9	32	37
3	10	114	117
3	11	167	163
3	12	78	85
3	13	62	57
3	14	96	101
3	15	38	26
3	17	126	128
3	18	71	78
3	19	32	24
3	21	44	46
4	1	62	62
4	2	192	185
4	3	101	98
4	4	33	34
4	5	59	61
4	6	162	156
4	8	85	83
4	9	64	64

K	L	FO	FC
4	10	80	81
4	12	36	26
4	13	72	68
4	14	41	36
4	15	66	68
4	16	68	63
4	17	43	37
4	20	111	114
4	21	38	42
5	0	147	134
5	1	165	166
5	2	192	181
5	3	94	89
5	4	86	85
5	5	94	83
5	6	88	87
5	8	39	33
5	9	60	59
5	10	142	137
5	11	117	114
5	12	134	139
5	13	115	113
5	14	103	103
5	15	100	98
5	16	72	70
5	18	69	66
5	19	42	45
6	0	73	71
6	1	159	148
6	2	94	90
6	3	173	162
6	4	179	171
6	5	232	223
6	6	123	116
6	7	224	212
6	8	119	117
6	9	70	63
6	10	84	81
6	11	164	166
6	13	162	160
6	15	38	38
6	17	74	72
7	0	147	140
7	1	200	201
7	2	42	40
7	3	35	33
7	5	231	215
7	6	30	25
7	7	50	48
7	8	31	26
7	9	48	43
7	10	44	45
7	12	35	35
7	17	51	50
8	0	113	110
8	1	161	153

K	L	FO	FC
8	2	94	98
8	3	41	30
8	4	144	141
8	5	55	48
8	6	78	75
8	7	51	54
8	8	242	235
8	9	69	67
8	11	44	39
8	12	147	144
8	15	50	44
8	18	58	49
8	19	49	41
9	0	31	27
9	1	84	81
9	2	70	71
9	3	56	55
9	4	118	115
9	6	87	85
9	7	48	47
9	9	76	78
9	12	113	109
9	13	63	61
9	14	58	60
9	15	66	66
10	1	98	99
10	2	80	83
10	5	111	111
10	6	49	51
10	7	63	59
10	8	166	166
10	10	60	62
10	12	58	57
10	14	48	48
11	0	51	57
11	1	138	139
11	2	125	128
11	5	37	32
11	6	109	112
11	9	50	56
11	10	39	36
11	11	43	38
11	12	59	60
11	13	72	74
11	14	41	36
11	15	61	64
11	16	59	49
12	1	62	68
12	3	60	64
12	4	74	78
12	7	55	59
12	8	66	61
12	9	85	86
12	10	45	37
12	14	51	47
13	1	129	135

K	L	FO	FC
13	6	65	74
14	1	78	81
14	3	87	101
14	4	62	70
14	5	87	97
14	8	58	60

H= -3

K	L	FO	FC
0	0	115	138
0	2	197	241
0	4	212	252
0	6	209	246
0	8	377	420
0	10	107	108
0	12	180	191
0	14	67	64
0	16	70	68
0	18	43	42
0	20	151	151
0	22	94	92
1	0	116	132
1	1	161	183
1	2	83	99
1	3	172	193
1	4	223	251
1	5	156	171
1	6	115	124
1	8	40	21
1	10	74	75
1	11	74	78
1	12	167	179
1	13	83	93
1	14	42	40
1	17	105	113
1	22	42	46
1	23	50	49
2	0	85	90
2	1	369	372
2	2	110	112
2	3	196	199
2	5	204	218
2	6	44	37
2	8	231	242
2	9	74	74
2	10	107	116
2	11	192	207
2	13	223	231
2	14	48	44
2	15	78	85
2	16	50	53
2	20	38	48
3	0	201	179
3	1	489	464
3	2	321	314
3	3	94	81

K	L	FO	FC
3	5	175	161
3	6	154	148
3	7	30	22
3	8	47	47
3	9	150	145
3	10	198	191
3	10	197	191
3	11	49	56
3	13	87	92
3	14	67	66
3	15	129	131
3	16	67	71
3	18	56	57
3	19	102	103
4	0	184	171
4	1	86	85
4	2	309	292
4	3	129	124
4	6	72	68
4	8	190	178
4	12	47	44
4	13	38	43
4	14	72	71
4	15	47	44
4	16	96	98
4	18	50	49
4	19	83	82
4	20	48	49
5	0	170	152
5	1	236	222
5	2	184	174
5	3	74	69
5	4	212	201
5	5	280	262
5	6	250	247
5	7	123	112
5	9	36	39
5	10	75	73
5	11	115	108
5	12	146	146
5	13	40	42
5	14	41	39
5	15	78	84
5	16	105	106
5	22	49	48
6	0	84	77
6	3	129	119
6	4	217	211
6	5	176	165
6	7	240	234
6	8	138	133
6	9	310	305
6	10	60	59
6	11	77	71
6	12	99	93
6	14	79	79

Table E. (continued)

K	L	FO	FC
6	17	42	41
7	1	140	137
7	2	79	75
7	3	50	46
7	4	36	35
7	5	151	149
7	6	35	32
7	7	85	81
7	8	30	30
7	9	146	140
7	10	44	44
7	11	67	62
7	12	30	24
7	13	35	35
7	17	36	44
7	18	35	34
7	19	46	43
8	0	131	126
8	1	136	135
8	2	41	33
8	4	227	223
8	5	75	69
8	8	164	162
8	9	29	20
8	11	56	50
8	12	174	166
8	13	32	36
8	15	34	40
8	16	67	71
8	19	52	55
9	0	195	191
9	1	79	72
9	2	125	115
9	3	34	34
9	5	166	165
9	7	99	99
9	9	41	32
9	10	41	45
9	11	106	111
9	16	145	146
10	2	87	84
10	4	84	87
10	6	76	83
10	7	37	32
10	8	109	116
10	10	50	50
10	11	81	84
10	12	106	106
10	15	61	68
11	0	41	40
11	2	146	149
11	4	54	51
11	5	204	203
11	6	50	40
11	7	43	47
11	8	45	44
11	10	56	58
11	11	72	82
11	14	70	73
11	16	44	44
12	0	46	54
12	1	154	162
12	5	63	65
12	8	80	92
12	9	87	93
13	1	38	44
13	4	59	56
13	5	127	136
13	11	53	45
13	12	77	75
14	1	53	61
14	5	50	53
14	7	55	70
14	8	75	81
14	9	50	51
15	0	53	61
15	1	63	79

H= -2

K	L	FO	FC
0	0	237	285
0	2	37	39
0	4	276	312
0	6	177	207
0	8	184	208
0	10	147	155
0	12	376	414
0	14	32	22
0	16	214	224
0	18	110	115
0	20	54	63
1	0	19	28
1	1	70	79
1	2	172	167
1	3	75	76
1	4	257	277
1	5	138	135
1	6	60	65
1	8	125	135
1	9	179	199
1	13	101	114
1	15	155	173
1	16	143	155
1	20	37	37
2	0	124	117
2	1	113	115
2	2	26	19
2	4	36	27
2	5	141	137
2	6	180	186
2	7	309	306
2	8	135	138
2	9	372	383
2	10	59	61
2	11	75	79
2	12	49	55
2	13	73	71
2	15	98	107
2	16	36	33
2	17	96	107
2	19	74	82
3	0	143	123
3	1	50	46
3	2	400	370
3	3	41	47
3	4	171	157
3	5	475	453
3	6	259	252
3	7	61	57
3	8	79	73
3	9	75	71
3	10	91	90
3	11	168	167
3	13	53	43
3	14	75	77
3	16	31	32
3	18	43	41
3	19	86	88
3	21	39	35
3	22	65	71
3	23	45	48
4	0	292	274
4	1	332	315
4	2	291	264
4	3	51	50
4	4	37	31
4	5	46	43
4	8	252	245
4	9	28	29
4	10	83	84
4	12	28	27
4	13	101	98
4	14	127	124
4	15	76	77
4	19	38	37
4	22	56	58
5	0	106	96
5	1	245	220
5	2	122	113
5	3	192	184
5	4	211	204
5	5	131	126
5	6	92	92
5	7	162	155
5	8	106	95
5	9	94	91
5	10	85	82
5	12	90	95
5	14	120	120
5	15	61	56
5	16	83	83
5	18	60	62
5	19	58	57
6	0	27	13
6	1	328	307
6	3	209	188
6	4	55	47
6	5	177	173
6	7	104	98
6	8	186	188
6	9	106	100
6	10	37	37
6	11	98	91
6	12	175	178
6	13	197	202
6	14	31	42
6	15	61	64
6	16	37	33
6	18	35	30
6	21	46	40
7	0	51	44
7	1	85	80
7	2	67	59
7	3	46	49
7	4	86	82
7	5	147	139
7	6	67	65
7	7	57	52
7	8	80	81
7	9	114	109
7	11	64	60
7	13	54	49
7	15	122	118
7	16	66	64
7	17	95	98
7	20	40	37
7	21	43	43
8	0	149	149
8	1	189	184
8	2	85	77
8	3	38	25
8	4	156	153
8	5	133	130
8	6	202	201
8	8	212	210
8	9	54	46
8	10	54	54
8	11	63	57
8	12	48	54
8	13	39	41
8	15	69	70
8	16	84	85
8	17	49	49
8	18	55	53
8	19	99	106
8	20	69	71
9	0	67	69
9	1	101	102
9	2	209	206
9	3	134	133
9	4	151	150
9	6	145	142
9	7	64	64
9	9	38	33
9	11	32	27
9	12	72	79
9	14	48	48
9	15	53	49
9	17	39	38
10	0	104	100
10	1	44	43
10	2	57	59
10	4	90	94
10	5	53	51
10	8	169	175
10	9	46	50
10	10	84	67
10	11	60	58
10	12	63	69
10	13	77	85
10	15	60	56
10	16	56	60
11	0	62	63
11	1	125	133
11	2	82	77
11	3	124	128
11	4	138	126
11	5	36	40
11	6	120	128
11	7	42	41
11	9	95	95
11	10	124	128
11	14	43	43
12	0	64	67
12	1	122	126
12	4	72	78
12	5	50	49
12	6	41	32
12	7	81	86
12	10	37	35
12	12	38	51
12	13	36	27
13	0	55	62
13	1	54	60
13	3	87	101
13	4	73	82
13	9	62	68
13	10	37	45
14	0	50	55
14	2	41	44
14	3	48	57
14	4	62	66
14	5	42	43
14	7	42	31
14	8	56	59
14	9	43	50
15	0	52	52
15	1	39	23
15	4	45	46
15	5	58	65

H= -1

K	L	FO	FC
0	2	364	426
0	4	373	472
0	6	42	50
0	8	242	279
0	10	92	102
0	12	81	82
0	14	223	245
0	16	70	74
0	18	96	101
0	20	122	134
1	0	152	152
1	1	252	240
1	2	153	147
1	3	125	129
1	4	194	197
1	5	191	196
1	6	208	210
1	7	131	143
1	8	154	170
1	9	54	57
1	10	144	160
1	11	170	182
1	13	34	33
1	14	66	63
1	15	72	78
1	19	44	46
1	20	76	86
1	21	50	46
2	0	51	49
2	1	198	198
2	2	42	39
2	3	186	183
2	4	79	78
2	5	41	24
2	7	228	222
2	8	98	98
2	9	41	37
2	10	87	86
2	11	263	267
2	12	49	53
2	13	241	252
2	16	94	92
2	17	38	43
2	18	33	40
2	19	36	35
2	21	66	68
3	1	286	253
3	2	247	223
3	3	545	508
3	4	199	188
3	5	79	84
3	6	282	266
3	7	269	248
3	8	57	52
3	9	236	233
3	10	130	132
3	11	28	23
3	14	93	94
3	15	159	157
3	16	59	53
3	18	63	68
3	19	43	45
3	21	37	22
4	0	427	389
4	1	134	122
4	2	84	67
4	4	30	23
4	5	101	104
4	6	28	31
4	7	92	90
4	8	71	65
4	9	105	107
4	10	118	114
4	11	90	97
4	12	114	113
4	13	44	42
4	15	29	25
4	17	73	75
4	18	74	75
4	19	74	72
4	20	39	55
4	22	73	71
5	0	96	87
5	1	45	35
5	2	214	198
5	3	207	188
5	4	254	236
5	5	68	65
5	6	143	140
5	7	41	45
5	8	164	161
5	9	88	87
5	10	135	142
5	11	90	91
5	13	100	90
5	16	64	66
5	18	57	58
5	19	87	89
5	20	51	41
5	21	54	52
5	22	56	63
6	0	100	92
6	2	54	51
6	3	65	61
6	4	26	22
6	5	100	91
6	6	99	98
6	7	222	213
6	8	147	147
6	9	150	158
6	10	162	162
6	11	67	67
6	12	144	147
6	13	57	53
6	15	67	67
6	16	41	39
6	17	123	129
6	19	64	78
7	0	43	41
7	3	138	131
7	4	29	25
7	5	175	166
7	6	128	121
7	7	145	136
7	8	27	28
7	9	113	113
7	10	55	60
7	11	104	99
7	13	43	43
7	14	75	74
7	15	110	111
7	17	78	77
8	0	373	368
8	1	239	227
8	3	169	159
8	4	82	79
8	5	165	168
8	6	29	27
8	7	62	61
8	9	54	53
8	10	44	48
8	11	64	81
8	12	204	218
8	13	73	78
8	15	71	75
8	16	114	121
8	17	38	43
8	18	40	44
8	19	46	51
8	20	51	55
9	0	35	34
9	1	59	61
9	2	51	42
9	3	40	48
9	4	251	256

Table E. (continued)

K	L	FO	FC
9	5	48	53
9	6	98	101
9	7	52	56
9	8	123	124
9	9	39	34
9	10	47	47
9	12	51	52
9	13	42	44
9	14	60	62
9	16	72	75
10	0	145	143
10	1	75	77
10	2	85	82
10	3	114	116
10	4	34	32
10	5	52	52
10	6	100	94
10	7	74	79
10	8	122	126
10	9	47	42
10	10	39	29
10	12	114	117
10	13	33	31
10	14	90	92
11	0	48	47
11	2	156	155
11	4	59	65
11	5	93	98
11	6	142	147
11	7	69	73
11	10	63	65
11	11	49	54
11	13	76	76
11	14	54	62
11	15	37	40
12	0	80	88
12	1	130	139
12	8	39	51
12	11	61	67
13	0	41	49
13	1	58	56
13	2	35	34
13	4	49	55
13	5	91	95
13	6	47	54
13	7	93	98
13	8	36	40
13	11	56	60
14	0	61	58
14	1	44	43
14	3	82	90
14	5	38	35
14	7	69	69
14	8	82	88
14	9	105	119
15	3	48	54
15	4	74	84
	H= 0		
0	2	143	164
0	4	110	118
0	6	143	147
0	8	192	202
0	10	92	106
0	12	100	105
0	14	38	39
0	18	142	159
0	20	56	59
0	22	75	75
1	2	75	72
1	3	267	249
1	4	317	318
1	5	84	75
1	6	61	68
1	7	88	79
1	8	92	86
1	9	72	68
1	10	73	71
1	11	63	69
1	12	49	50
1	13	60	59
1	14	130	137
1	16	40	53
1	17	67	76
1	21	52	60
1	22	56	57
2	0	53	57
2	1	164	143
2	2	165	154
2	3	80	73
2	5	232	221
2	7	500	494
2	8	79	74
2	9	129	137
2	10	26	22
2	11	255	253
2	12	32	37
2	13	74	77
2	14	145	152
2	15	86	87
2	16	34	33
2	17	96	105
2	18	73	79
3	1	264	239
3	2	169	163
3	3	112	95
3	4	102	89
3	5	28	24
3	6	310	290
3	7	347	348
3	8	72	73
3	10	225	222
3	11	154	155
3	13	83	84
3	14	85	88
3	15	110	114
3	17	77	74
3	18	45	46
3	19	85	89
3	20	37	28
3	23	47	55
4	0	367	314
4	1	153	134
4	2	33	30
4	3	145	138
4	4	380	355
4	5	143	145
4	6	141	130
4	7	45	43
4	8	84	76
4	9	50	55
4	10	98	92
4	11	206	206
4	12	99	98
4	13	34	37
4	14	73	68
4	15	104	101
4	18	97	100
4	20	49	51
4	21	72	65
4	22	63	64
5	1	78	71
5	2	158	139
5	3	156	140
5	4	216	206
5	5	83	80
5	6	130	123
5	7	161	158
5	8	223	221
5	9	183	173
5	10	80	71
5	11	179	179
5	13	70	75
5	14	161	171
5	15	100	105
5	16	33	27
5	21	41	40
6	0	185	169
6	1	232	211
6	2	108	108
6	3	271	264
6	4	31	7
6	5	47	44
6	6	196	191
6	8	192	194
6	9	64	62
6	10	88	82
6	11	198	199
6	12	52	55
6	13	140	139
6	14	69	73
6	15	65	63
6	16	67	76
6	17	91	98
6	21	50	48
7	1	95	90
7	2	37	29
7	3	313	299
7	4	168	164
7	5	157	153
7	6	37	34
7	8	81	81
7	9	70	71
7	13	32	33
7	15	79	77
7	16	34	26
7	19	74	72
8	0	64	68
8	1	259	248
8	2	60	57
8	3	67	56
8	4	248	241
8	5	84	86
8	6	131	128
8	7	47	49
8	8	146	147
8	9	28	35
8	10	39	36
8	12	62	62
8	13	37	42
8	14	87	97
8	16	103	111
8	17	62	62
8	18	38	48
8	19	38	38
9	1	59	52
9	3	105	109
9	4	78	75
9	5	61	57
9	6	124	124
9	8	220	224
9	9	72	71
9	10	156	163
9	11	59	61
9	15	59	64
10	1	145	150
10	2	48	45
10	3	61	65
10	4	56	53
10	5	38	46
10	6	106	108
10	10	130	127
10	12	116	131
10	16	46	47
11	2	120	123
11	3	130	134
11	6	147	148
11	8	96	101
11	9	89	94
11	10	75	79
11	11	50	59
11	13	41	55
11	15	97	107
11	16	44	39
12	1	79	87
12	2	38	47
12	4	64	74
12	5	127	135
12	11	45	47
12	12	54	65
12	14	55	63
13	3	110	123
13	4	47	45
13	5	42	38
13	7	35	31
13	8	38	47
13	11	44	47
14	0	104	115
14	1	92	97
14	3	84	93
14	5	93	106
14	6	51	57
15	2	61	65
15	4	60	64
	H= 1		
0	1	16	0
0	2	57	85
0	4	667	744
0	6	117	106
0	8	127	125
0	12	134	135
0	16	131	147
0	20	74	85
0	22	140	156
1	2	86	108
1	3	112	139
1	4	39	46
1	5	71	81
1	6	112	103
1	7	169	159
1	8	363	380
1	9	161	161
1	10	109	111
1	11	40	40
1	12	51	55
1	13	104	104
1	14	60	58
1	16	33	37
1	17	63	66
1	18	73	72
1	19	68	80
2	1	119	110
2	3	213	228
2	4	115	135
2	5	181	202
2	6	64	65
2	7	68	77
2	8	125	128
2	9	26	25
2	10	137	144
2	11	328	341
2	12	112	117
2	13	83	88
2	14	83	85
2	15	120	118
2	16	92	96
2	17	75	78
2	18	47	49
2	20	41	36
2	21	47	48
3	1	91	90
3	2	359	331
3	3	396	392
3	4	147	148
3	6	136	141
3	7	141	146
3	8	28	22
3	9	29	26
3	10	105	110
3	11	166	178
3	12	96	98
3	13	121	124
3	14	134	140
3	15	186	196
3	17	33	35
4	1	295	275
4	2	186	174
4	3	180	168
4	4	284	284
4	5	55	60
4	6	39	40
4	10	95	104
4	12	57	63
4	13	61	66
4	15	106	113
4	16	38	35
4	17	74	85
4	18	166	120
4	19	111	118
5	1	228	207
5	2	60	61
5	3	52	49
5	4	87	84
5	5	30	24
5	5	26	24
5	6	259	262
5	7	267	281
5	8	217	243
5	10	185	182
5	11	188	185
5	14	58	51
5	15	79	75
5	18	96	101
6	1	260	235
6	2	139	133
6	3	263	248
6	4	29	4
6	5	294	281
6	6	192	184
6	7	284	264
6	9	186	173
6	10	80	79
6	11	113	108
6	12	100	100
6	13	56	54
6	14	39	34
6	15	57	55
6	17	34	39
6	18	46	43
6	21	49	53
7	2	60	65
7	3	261	248
7	4	26	27
7	5	149	141
7	6	68	74
7	7	129	121
7	8	46	44
7	9	39	30
7	13	73	67
7	14	36	37
7	18	36	30
7	19	84	78
8	1	51	51
8	2	42	34
8	3	114	108
8	4	191	190
8	5	145	139
8	6	52	51
8	8	222	215
8	9	36	36
8	11	58	63
8	12	81	82
8	13	39	35
8	14	51	51
8	17	38	44
8	18	54	58
9	1	114	108
9	2	129	128
9	3	33	30
9	4	94	93
9	5	117	119
9	7	159	156
9	9	38	44
9	11	65	68
9	12	151	158
9	14	108	108
9	18	36	43
10	1	72	74
10	2	59	54
10	3	35	34
10	5	78	78
10	6	125	138
10	7	66	65
10	8	66	78
10	10	120	123
10	11	51	57
10	12	36	48
10	14	82	86
10	15	63	65
10	16	64	66
11	1	129	131
11	2	88	95
11	3	73	72
11	4	75	71
11	7	159	171
11	10	87	92
11	11	76	80
11	14	141	148
11	16	42	31
12	1	51	51
12	2	41	49
12	3	131	135
12	4	73	75
12	5	105	105
12	7	35	39
12	8	51	56
12	10	57	68
12	11	99	104
13	3	39	58
13	7	106	116
13	8	99	98
13	11	48	52
14	1	103	118
14	4	53	52
14	5	36	34
14	6	41	45
14	7	59	72
14	8	38	39
14	9	46	53
	H= 2		
0	2	388	418
0	4	111	97
0	6	141	128

Table E. (continued)

K	L	FO	FC
0	8	471	439
0	10	111	104
0	12	170	169
0	14	129	133
0	16	100	104
0	18	100	111
0	20	43	44
1	1	39	35
1	2	269	265
1	3	130	129
1	4	118	90
1	5	171	161
1	6	134	124
1	7	60	53
1	8	41	35
1	9	170	159
1	10	34	33
1	11	157	147
1	12	205	196
1	13	139	131
1	14	120	113
1	15	120	118
1	16	102	101
1	18	64	60
2	1	291	270
2	2	203	185
2	3	310	274
2	5	200	170
2	6	159	147
2	7	148	132
2	8	40	34
2	9	356	332
2	10	39	40
2	11	120	113
2	15	154	144
2	16	70	65
2	19	51	46
2	21	68	61
2	22	50	55
3	1	243	218
3	2	257	226
3	3	173	158
3	4	77	67
3	5	270	237
3	6	189	168
3	7	289	265
3	8	159	150
3	9	121	107
3	10	101	93
3	11	127	119
3	13	105	97
3	15	133	127
3	18	123	118
3	19	95	97
4	1	32	28
4	2	210	187

K	L	FO	FC
4	4	195	183
4	5	171	155
4	6	129	124
4	7	54	55
4	10	122	113
4	11	34	34
4	12	76	71
4	15	74	65
4	16	34	35
4	17	75	74
4	19	91	89
4	22	64	63
5	1	126	112
5	2	247	242
5	3	199	187
5	4	96	80
5	5	30	29
5	6	129	115
5	7	41	41
5	8	122	113
5	9	160	152
5	10	84	78
5	11	104	99
5	12	29	18
5	13	29	28
5	14	199	199
5	15	101	99
5	17	50	44
5	19	38	39
6	1	221	208
6	2	31	25
6	3	80	77
6	4	52	43
6	5	366	338
6	6	117	117
6	9	97	96
6	10	143	134
6	11	165	162
6	12	51	43
6	13	66	70
6	14	106	99
6	15	71	66
6	16	73	74
6	17	50	55
6	20	50	47
7	1	48	47
7	2	27	15
7	3	58	60
7	4	47	48
7	5	59	49
7	6	30	36
7	7	199	187
7	8	30	28
7	9	62	62
7	11	137	133
7	12	57	57

K	L	FO	FC
7	13	44	38
7	14	32	30
7	15	86	83
7	16	83	82
7	17	112	108
8	1	77	68
8	2	91	89
8	3	167	167
8	4	329	327
8	5	34	24
8	6	70	61
8	7	56	56
8	8	124	121
8	9	60	54
8	10	110	109
8	11	54	52
8	12	75	78
8	14	35	32
8	15	50	51
8	17	66	69
8	19	60	63
9	1	66	67
9	3	163	157
9	6	110	109
9	8	132	131
9	10	34	38
9	13	57	58
9	14	54	58
9	16	45	41
9	18	84	87
10	2	45	54
10	3	31	39
10	4	84	86
10	6	38	47
10	7	70	78
10	8	79	78
10	9	66	71
10	10	164	167
10	11	93	92
10	12	50	45
10	15	34	10
11	1	75	74
11	2	60	58
11	3	126	133
11	4	47	56
11	6	95	102
11	7	60	60
11	8	51	55
11	10	83	87
11	11	75	83
11	12	64	75
11	15	50	60
12	1	90	91
12	2	42	38
12	3	170	176
12	4	53	57

K	L	FO	FC
12	5	54	55
12	6	76	81
12	8	38	46
12	13	41	41
13	1	49	46
13	3	66	74
13	4	60	59
13	6	81	86
13	7	42	51
13	10	54	58
13	11	60	59
14	1	46	58
14	3	46	51
14	5	88	97
14	7	42	49
14	9	46	48
15	1	43	36

H= 3

K	L	FO	FC
0	2	254	274
0	4	464	483
0	6	152	142
0	8	187	169
0	10	310	298
0	12	198	196
0	16	44	48
0	18	39	46
0	20	73	75
0	22	66	76
1	1	183	176
1	2	42	35
1	3	52	46
1	4	112	107
1	5	173	154
1	6	262	249
1	7	280	268
1	8	57	49
1	9	42	39
1	10	128	121
1	12	121	114
1	13	67	59
1	14	87	85
1	15	35	36
1	16	101	98
1	17	86	90
1	18	54	49
1	20	48	43
2	1	169	86
2	2	186	171
2	3	284	264
2	4	91	91
2	5	277	271
2	6	121	109
2	7	73	70
2	10	141	134

K	L	FO	FC
2	11	221	206
2	13	197	188
2	15	61	55
2	17	42	44
2	18	43	42
2	19	45	54
2	20	65	63
3	1	367	334
3	2	334	302
3	3	370	339
3	4	40	36
3	5	64	61
3	6	38	31
3	7	26	10
3	8	38	28
3	9	32	34
3	10	141	133
3	11	186	180
3	14	82	85
3	15	44	46
3	16	39	39
3	17	108	114
3	20	44	45
4	2	160	141
4	3	332	320
4	4	29	19
4	5	134	129
4	6	118	109
4	7	128	114
4	8	181	171
4	9	89	84
4	11	63	54
4	12	49	48
4	13	36	35
4	14	95	94
4	15	47	50
4	19	66	70
4	20	52	54
4	21	69	71
5	1	65	59
5	2	56	48
5	3	131	114
5	5	135	126
5	6	319	311
5	7	38	32
5	9	34	24
5	13	74	72
5	15	78	81
5	16	120	125
5	19	100	97
6	1	188	176
6	2	55	51
6	3	129	120
6	4	47	39
6	5	87	78
6	8	76	70

K	L	FO	FC
6	9	257	252
6	10	252	248
6	12	66	62
6	13	61	61
6	14	72	73
6	15	113	112
6	17	42	49
6	19	58	52
7	2	108	98
7	3	30	28
7	5	46	50
7	6	56	57
7	7	181	176
7	8	43	44
7	9	114	110
7	10	50	47
7	11	74	81
7	12	79	82
7	13	189	188
7	14	71	75
7	16	41	35
7	17	37	21
8	1	54	43
8	2	183	175
8	3	210	205
8	4	34	31
8	5	73	64
8	6	91	87
8	7	70	72
8	8	156	156
8	9	79	79
8	10	45	42
8	11	70	71
8	12	141	145
8	14	51	50
8	16	101	107
8	17	84	81
9	2	182	184
9	3	50	49
9	5	47	52
9	6	134	133
9	7	94	96
9	9	38	43
9	10	50	50
9	11	40	35
9	14	51	56
9	16	96	100
10	2	69	68
10	3	98	94
10	4	32	26
10	5	38	43
10	6	164	170
10	7	30	8
10	9	72	76
10	14	109	116
10	15	48	42

K	L	FO	FC
10	16	60	52
11	1	31	13
11	2	222	228
11	3	38	32
11	5	91	96
11	6	72	68
11	7	88	96
11	8	45	41
11	11	36	34
11	12	76	69
11	15	51	58
12	1	61	66
12	2	41	44
12	3	39	46
12	7	84	92
12	9	62	65
13	1	43	42
13	2	102	109
13	3	38	29
13	5	58	75
13	7	64	73
13	10	52	58
14	1	53	59
14	4	60	55
14	5	88	100
14	7	37	27

H= 4

K	L	FO	FC
0	2	420	452
0	4	133	131
0	6	83	87
0	8	172	165
0	10	80	80
0	12	61	58
0	14	88	94
0	16	193	191
1	1	228	230
1	2	188	195
1	3	148	142
1	4	87	84
1	5	114	106
1	6	194	191
1	7	35	37
1	8	49	47
1	9	42	31
1	10	107	105
1	11	71	70
1	13	162	159
1	14	57	58
1	16	92	86
1	18	82	84
1	20	82	79
1	21	81	78
2	1	161	149
2	3	234	219

K	L	FO	FC
2	5	35	24
2	6	105	98
2	7	54	56
2	8	37	36
2	9	416	402
2	10	111	103
2	11	93	91
2	14	178	174
2	15	96	91
2	16	49	41
2	17	88	88
2	20	68	67
3	1	66	63
3	2	187	103
3	3	336	320
3	4	42	39
3	5	166	153
3	6	322	303
3	7	283	263
3	9	29	27
3	10	74	67
3	11	101	98
3	13	90	87
3	14	90	89
3	16	35	39
3	17	69	62
3	19	58	56
3	21	43	43
4	1	158	144
4	2	217	199
4	4	101	91
4	5	49	52
4	6	177	166
4	7	305	289
4	8	95	98
4	9	92	88
4	10	108	101
4	11	95	93
4	13	42	38
4	14	69	68
4	15	70	76
4	16	48	43
4	20	91	88
5	1	55	49
5	2	249	234
5	3	157	148
5	4	108	99
5	5	109	97
5	6	40	35
5	7	144	138
5	9	120	115
5	10	235	227
5	11	89	88
5	12	49	49
5	13	37	25
5	14	96	96

Table E. (continued)

K	L	FO	FC
5	16	47	48
5	17	108	112
5	18	42	32
6	1	146	148
6	2	140	131
6	3	45	38
6	4	48	46
6	5	171	162
6	6	82	81
6	7	46	44
6	8	174	169
6	9	31	23
6	10	59	62
6	11	35	34
6	13	226	221
6	14	106	109
6	18	49	49
7	2	78	76
7	3	144	136
7	4	130	125
7	5	186	182
7	7	85	77
7	8	30	30
7	9	101	94
7	18	51	49
7	17	124	129
8	1	177	167
8	2	127	123
8	3	221	215
8	4	122	115
8	5	33	14
8	6	111	110
8	7	38	40
8	8	108	115
8	9	55	63
8	10	123	126
8	11	43	47
8	12	109	113
8	16	52	57
9	1	42	58
9	2	38	34
9	3	42	32
9	4	63	57
9	5	41	42
9	6	218	222
9	8	42	41
9	9	61	65
9	11	80	85
9	12	96	102
9	14	56	52
10	1	91	91
10	4	92	98
10	5	57	61
10	6	49	57
10	7	37	31
10	10	162	169

K	L	FO	FC
10	12	69	74
10	14	53	52
10	15	48	47
11	2	95	97
11	3	60	65
11	4	72	72
11	6	165	169
11	8	39	46
11	9	75	79
11	11	69	78
12	3	138	145
12	4	43	45
12	5	50	53
12	10	37	36
12	11	45	47
13	3	97	103
13	6	57	70
14	1	50	59
14	2	66	72
14	5	74	82
	H= 5		
0	2	239	265
0	4	214	225
0	6	168	176
0	8	79	70
0	12	147	146
0	14	61	54
0	16	76	71
0	18	63	65
0	20	148	146
1	1	28	26
1	3	33	29
1	4	130	138
1	5	175	167
1	6	263	199
1	8	168	164
1	9	47	51
1	10	70	59
1	12	106	104
1	13	85	80
1	15	70	67
1	17	138	133
1	18	54	57
1	19	57	53
1	20	54	50
2	1	125	121
2	2	38	33
2	3	65	62
2	5	173	164
2	6	66	67
2	8	76	77
2	9	146	145
2	10	165	161
2	11	51	40

K	L	FO	FC
2	12	161	155
2	13	272	264
2	15	42	45
2	16	51	52
2	18	38	42
2	19	58	51
3	1	49	42
3	2	192	175
3	3	145	137
3	4	150	137
3	5	196	189
3	6	116	109
3	7	83	75
3	8	76	73
3	9	161	156
3	10	182	180
3	11	86	87
3	13	93	84
3	14	39	30
3	15	65	65
3	16	38	33
3	17	97	99
4	1	146	145
4	2	347	335
4	3	211	199
4	4	116	102
4	5	161	158
4	6	163	154
4	7	31	34
4	8	30	25
4	9	45	42
4	11	188	182
4	13	56	51
4	14	75	77
4	15	63	68
4	16	69	72
4	17	56	56
4	18	39	37
4	19	90	93
4	20	68	69
5	2	180	169
5	3	308	292
5	4	29	21
5	6	295	285
5	7	224	215
5	8	85	79
5	9	30	33
5	11	89	87
5	12	65	63
5	14	69	71
5	15	35	20
5	16	56	63
5	18	51	55
6	1	121	113
6	2	34	34
6	3	141	134

K	L	FO	FC
6	4	127	121
6	5	111	106
6	6	33	29
6	9	233	231
6	10	85	90
6	11	85	85
6	12	95	99
6	17	84	85
6	18	92	90
7	1	231	226
7	2	96	94
7	4	70	70
7	5	67	66
7	9	142	106
7	10	37	34
7	11	53	53
7	13	38	40
8	1	95	94
8	2	94	90
8	3	146	140
8	4	149	152
8	5	74	69
8	7	120	120
8	8	36	45
8	9	50	45
8	10	106	111
8	14	107	114
8	15	52	57
8	16	48	49
9	1	67	69
9	2	35	27
9	3	64	64
9	4	123	121
9	5	52	51
9	7	85	86
9	8	58	64
9	10	95	100
9	11	44	42
9	16	45	49
10	2	122	125
10	3	45	43
10	8	139	143
10	11	53	64
10	14	142	150
11	2	39	44
11	3	108	114
11	4	97	98
11	5	90	103
11	7	109	112
11	10	90	97
12	1	57	59
12	3	104	103
12	5	46	44
12	7	112	118
12	10	54	56
12	11	73	79

K	L	FO	FC
13	1	56	52
13	3	60	63
13	7	74	82
14	1	68	77
	H= 6		
0	2	347	393
0	4	118	133
0	6	186	204
0	8	137	137
0	10	146	155
0	12	76	78
0	14	125	131
0	16	112	112
0	20	61	58
1	1	93	102
1	2	180	105
1	3	69	74
1	4	191	196
1	5	63	61
1	6	101	97
1	7	42	53
1	8	97	101
1	9	162	167
1	10	113	107
1	11	49	44
1	12	64	60
1	15	64	64
1	16	75	74
1	18	36	37
2	1	88	79
2	2	182	177
2	3	28	24
2	5	119	114
2	6	85	81
2	7	71	75
2	8	201	189
2	9	196	182
2	10	44	36
2	11	112	102
2	12	80	78
2	13	139	128
2	14	44	40
2	16	66	65
2	17	121	113
3	1	54	44
3	2	154	151
3	3	183	93
3	4	32	27
3	5	189	174
3	6	133	127
3	7	169	150
3	8	123	120
3	9	86	81
3	10	40	40

K	L	FO	FC
3	11	172	160
3	12	53	48
3	14	66	63
3	15	31	23
3	16	27	26
3	17	41	34
3	18	34	32
4	1	68	58
4	2	285	265
4	3	83	77
4	4	107	102
4	5	110	102
4	6	160	154
4	7	106	98
4	8	87	81
4	9	38	30
4	10	43	43
4	11	123	120
4	13	25	26
4	14	40	39
4	15	150	148
4	19	41	45
5	1	47	47
5	2	28	24
5	3	127	120
5	4	125	115
5	5	150	148
5	6	48	40
5	7	124	118
5	8	41	38
5	9	75	69
5	10	187	178
5	11	53	48
5	12	52	54
5	14	50	48
5	15	39	38
5	16	57	55
5	18	78	73
6	1	311	290
6	2	29	13
6	3	57	59
6	4	84	72
6	5	97	86
6	8	91	87
6	10	46	41
6	12	69	55
6	13	125	123
6	14	125	123
6	15	40	35
6	16	97	95
7	1	40	43
7	2	84	75
7	3	88	79
7	4	32	21
7	5	260	250
7	6	46	40

K	L	FO	FC
7	7	43	40
7	8	74	68
7	9	41	37
7	11	34	38
7	12	45	44
7	13	82	81
7	17	116	118
8	1	165	156
8	2	37	24
8	3	89	87
8	4	165	160
8	5	81	78
8	6	87	91
8	7	71	63
8	8	66	73
8	11	59	55
8	12	34	38
8	13	34	35
8	16	33	29
9	1	73	72
9	2	34	35
9	3	78	80
9	4	83	75
9	6	49	40
9	8	143	146
9	9	44	37
9	10	81	75
9	12	62	61
9	14	44	35
10	1	70	75
10	2	54	45
10	3	53	63
10	4	27	18
10	7	67	62
10	8	60	58
10	9	51	46
10	10	67	72
10	12	120	128
10	13	48	55
11	2	46	42
11	3	33	34
11	5	112	114
11	6	89	93
11	7	62	64
11	8	67	72
11	9	57	64
11	10	36	40
11	11	49	45
11	12	75	70
12	1	149	148
12	2	31	35
12	3	85	91
12	4	52	51
12	5	53	65
12	6	62	53
12	9	60	55

K	L	FO	FC
13	2	60	64
13	4	58	67
13	5	80	72
13	6	83	83
13	7	33	39
14	1	58	54
	H= 7		
0	2	64	71
0	4	351	374
0	6	293	317
0	8	182	195
0	10	25	27
0	12	48	59
0	14	45	51
1	1	164	178
1	2	31	28
1	3	107	109
1	4	35	34
1	5	206	213
1	6	78	78
1	7	106	106
1	8	213	211
1	9	22	22
1	10	137	135
1	11	48	48
1	12	101	98
1	13	58	61
1	15	40	43
1	17	46	49
2	1	308	301
2	2	107	104
2	3	91	91
2	4	86	86
2	5	46	46
2	6	29	29
2	7	21	3
2	8	40	38
2	11	126	125
2	12	79	78
2	13	152	145
2	14	35	33
2	15	29	12
2	16	45	46
2	17	34	42
2	18	74	78
3	1	65	56
3	2	77	75
3	3	95	92
3	4	76	76
3	5	131	127
3	6	62	59
3	7	119	114
3	9	29	26
3	10	104	97

Table E. (continued)

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
3	11	82	77	8	1	107	93	1	13	70	71	5	15	38	41		H=	9		4	11	57	59	0	12	31	29	7	3	30	26
3	12	52	51	8	2	176	167	1	14	42	45	5	16	47	49					4	12	36	39	0	14	44	53	7	4	57	57
3	13	81	84	8	3	27	31	1	15	62	59	6	1	155	146	0	2	25	20	4	15	48	43	1	1	51	54	7	5	46	47
3	14	47	51	8	4	71	65	1	16	90	94	6	2	117	111	0	4	124	131	5	2	151	145	1	2	35	35	7	7	51	58
3	15	79	78	8	5	172	169	1	17	64	66	6	4	68	66	0	6	107	115	5	3	110	104	1	3	27	33	8	1	34	33
3	16	30	30	8	7	70	66	2	1	32	24	6	5	94	86	0	8	26	25	5	4	26	26	1	4	97	102	8	3	60	60
3	18	40	37	8	8	74	68	2	2	40	41	6	6	34	32	0	10	44	47	5	6	79	82	1	5	117	129	8	4	58	64
4	1	200	183	8	11	40	41	2	3	33	25	6	7	28	19	0	12	76	77	5	7	61	66	1	6	33	35	8	5	83	79
4	2	189	181	8	12	93	95	2	4	59	52	6	8	106	102	0	14	44	40	5	8	115	107	1	8	33	33	8	6	40	40
4	3	154	145	8	13	68	63	2	5	208	205	6	9	126	121	0	16	84	85	5	9	44	47	1	9	48	52	8	8	31	35
4	6	56	51	8	15	48	51	2	6	53	53	6	11	52	54	1	1	92	96	5	10	29	24	1	10	29	22	8	9	45	34
4	7	71	66	9	2	64	62	2	7	70	71	6	12	46	39	1	2	70	71	5	12	39	38	1	11	88	97	9	3	65	57
4	8	46	39	9	3	42	40	2	9	117	112	6	13	87	84	1	5	40	38	5	13	46	52	1	12	53	56	9	4	79	76
4	10	127	124	9	4	90	96	2	10	56	59	6	15	32	33	1	7	72	79	6	1	55	48	2	1	63	64	9	8	59	68
4	11	117	111	9	5	91	85	2	11	78	77	7	1	139	136	1	8	83	86	6	4	53	56	2	2	37	38	11	1	47	43
4	12	27	25	9	6	72	70	2	14	47	47	7	3	25	25	1	9	36	43	6	5	152	143	2	3	36	44				
4	13	39	40	9	7	45	43	2	15	57	63	7	4	34	27	1	10	54	57	6	9	75	70	2	4	113	120		H=	11	
4	15	79	80	9	10	37	34	2	16	105	105	7	5	112	107	1	11	40	45	6	10	45	44	2	5	61	62				
4	16	53	54	9	12	74	77	2	17	52	52	7	6	68	69	1	13	85	90	6	11	86	85	2	6	66	66	0	2	41	29
4	17	34	40	9	13	33	28	3	1	97	89	7	7	101	98	1	14	82	86	6	12	53	52	2	8	119	124	0	4	198	221
5	1	22	16	10	1	26	24	3	2	153	149	7	10	74	68	1	15	40	36	6	13	34	28	2	11	107	104	0	6	75	84
5	2	161	151	10	2	127	123	3	3	90	81	7	11	64	63	1	16	35	48	7	1	27	31	2	12	35	43	0	8	63	74
5	3	24	14	10	3	50	48	3	6	68	60	7	12	31	30	2	1	82	88	7	3	59	52	2	14	33	31	0	10	45	49
5	4	114	112	10	5	103	103	3	7	49	47	7	13	116	113	2	2	67	74	7	5	34	39	3	1	61	58	1	1	88	98
5	5	58	55	10	6	33	40	3	8	69	68	8	1	168	162	2	3	31	33	7	9	75	79	3	2	61	62	1	2	59	64
5	6	113	108	10	8	93	94	3	9	144	141	8	2	65	62	2	4	48	48	7	10	49	50	3	3	34	27	1	3	58	58
5	7	34	28	11	1	37	37	3	10	36	37	8	3	128	128	2	6	120	127	7	11	60	61	3	4	26	33	1	4	80	91
5	8	108	102	11	2	55	62	3	11	31	27	8	4	112	128	2	7	95	93	8	1	103	96	3	6	85	89	1	7	65	73
5	9	61	62	11	4	60	57	3	12	30	27	8	5	103	94	2	8	81	83	8	3	28	26	3	7	169	166	1	8	96	108
5	10	24	19	11	8	50	53	3	14	44	44	8	6	124	117	2	9	73	76	8	5	75	69	3	8	42	46	1	10	46	53
5	11	62	69	11	9	56	59	4	1	120	107	8	7	41	39	2	10	101	105	8	6	85	79	3	10	38	38	2	3	36	25
5	12	31	38	11	10	30	18	4	3	122	115	8	8	106	106	2	11	94	96	8	8	57	62	3	12	37	38	2	4	67	74
5	14	71	71	12	1	82	83	4	4	99	95	8	10	48	41	2	12	102	102	8	9	44	35	4	1	81	80	2	5	47	43
5	15	63	63	12	2	75	76	4	5	107	96	8	12	48	42	2	13	86	87	8	10	81	78	4	2	60	63	2	6	42	32
5	16	37	40	12	5	75	75	4	6	118	110	9	1	27	35	2	15	55	54	8	12	55	52	4	4	119	117	2	8	64	64
6	1	56	52	13	2	38	31	4	7	141	140	9	2	71	68	2	16	33	35	9	1	55	49	4	6	37	36	2	11	68	64
6	4	27	29					4	8	40	39	9	3	47	43	3	1	100	95	9	3	47	56	4	7	123	118	2	12	56	67
6	5	170	163		H=	8		4	9	27	26	9	4	68	68	3	2	97	96	9	4	100	96	4	8	46	45	3	1	74	72
6	6	97	86					4	11	57	55	9	5	29	26	3	3	123	112	9	7	54	49	4	9	52	45	3	2	47	46
6	7	74	73	0	2	258	275	4	12	67	66	9	7	55	54	3	4	66	63	9	8	46	43	4	11	122	125	3	3	108	104
6	8	70	58	0	4	26	25	4	13	50	48	9	8	116	124	3	6	94	90	9	10	44	48	5	1	95	91	3	4	54	58
6	9	88	82	0	6	78	83	4	15	62	60	9	9	66	64	3	9	75	72	10	4	105	106	5	2	36	36	3	5	41	40
6	10	64	62	0	8	100	104	4	16	42	44	9	10	51	53	3	11	34	31	10	6	57	58	5	3	86	88	3	9	43	31
6	12	160	162	0	10	73	69	5	1	26	20	9	11	51	52	3	12	48	45	10	8	55	52	5	5	39	29	3	10	63	69
6	13	31	34	0	12	120	122	5	2	29	27	9	12	51	52	3	13	61	59	11	1	70	71	5	6	39	37	3	11	62	63
6	14	37	34	0	14	40	41	5	3	49	46	10	1	95	92	3	15	62	63	11	3	32	33	5	8	76	75	4	1	32	33
6	17	73	71	0	16	29	16	5	4	80	78	10	2	72	73	3	16	32	27	11	4	53	50	5	10	52	55	4	2	60	65
7	1	44	46	1	2	50	46	5	5	28	17	10	4	47	37	4	1	26	24	11	5	29	28	6	1	91	88	4	3	124	117
7	4	28	27	1	3	111	112	5	6	93	85	10	6	85	85	4	2	46	38	12	1	58	58	6	2	55	51	4	4	55	54
7	8	85	81	1	4	118	121	5	7	32	31	10	9	39	38	4	3	179	170					6	3	48	51	4	5	91	84
7	9	214	212	1	5	32	27	5	8	118	115	10	10	41	47	4	4	185	182		H=	10		6	4	70	68	4	7	40	45
7	10	45	42	1	6	61	68	5	10	90	85	11	2	101	97	4	5	112	97					6	6	57	53	4	8	57	58
7	11	27	35	1	8	52	49	5	11	49	48	11	8	56	52	4	6	62	59	0	2	64	64	6	7	67	63	4	11	100	101
7	12	87	88	1	9	146	152	5	12	60	58	12	1	59	59	4	7	118	118	0	4	65	72	6	8	33	33	5	1	64	64
7	13	68	65	1	10	80	87	5	13	86	88	12	3	66	75	4	8	31	37	0	8	106	113	6	9	27	24	5	2	56	54
7	15	43	48	1	12	95	93	5	14	66	65	12	5	49	51	4	9	26	23	0	10	118	121	7	1	120	115	5	5	51	49

Table E. (concluded)

K	L	FO	FC
5	6	93	98
5	7	58	46
5	10	55	50
5	11	45	31
6	1	93	89
6	2	35	16
6	3	44	54
6	8	64	62
6	10	69	69
7	3	38	32
7	4	65	55
7	5	74	78
7	7	50	45
7	8	52	50
8	2	49	42
8	3	56	56
8	5	66	65
8	7	71	70
9	2	64	55
	H= 12		
0	2	153	165
0	4	45	40
0	8	81	86
1	2	63	69
1	6	89	97
1	9	67	71
2	1	97	98
2	3	47	44
2	9	58	59
3	2	49	46
3	4	53	46
3	5	67	59
3	6	58	44
3	7	52	48
3	8	43	34
4	4	52	48
4	6	45	48
4	7	76	77
4	8	73	69
4	9	76	76
5	2	56	53
6	1	45	40
6	5	60	59
6	7	43	33
7	1	75	67
7	2	63	52
7	3	42	39
7	5	58	60
8	1	47	47
8	3	103	95
	H= 13		
0	4	81	81
0	6	84	91
1	1	44	39
1	5	55	59
1	7	54	40
2	2	56	62
2	4	37	36
2	6	47	48
3	3	45	34
4	2	55	50
4	3	120	115
4	4	53	49
4	6	49	48
5	2	48	55
5	3	39	30
6	1	52	51
	H= 14		
0	2	86	89
1	1	52	47
2	2	38	33

Table F. Observed (FO) and Calculated (FC) Structure Factors for $Cu_2(Dapac)(OAc)$.

K	L	FO	FC
	H=-14		
0	2	58	60
0	4	17	17
0	6	30	29
1	2	9	8
1	4	7	5
2	2	17	17
2	3	32	32
2	4	10	11
2	5	44	43
	H=-13		
0	1	24	25
0	3	26	25
0	7	39	38
0	9	24	23
1	1	40	42
1	3	44	44
1	4	23	22
1	5	10	10
1	6	12	11
1	7	17	17
1	9	14	14
2	1	11	12
2	4	34	32
2	6	29	30
2	7	11	12
2	8	8	8
3	2	7	7
3	4	32	34
3	5	11	11
3	6	29	29
4	1	13	13
4	2	14	14
4	3	13	13
4	4	23	23
4	6	18	18
4	7	20	20
5	1	29	30
5	2	10	10
5	3	32	31
6	3	14	14
	H=-12		
0	2	33	33
0	4	8	8
0	6	16	14
0	8	14	12
0	10	12	10
1	1	23	23
1	2	62	65
1	3	25	25
1	4	32	31
1	5	34	33
1	6	22	21
1	7	15	14
1	8	50	48
1	9	16	14
1	10	19	18
2	1	21	22
2	2	15	15
2	4	21	20
2	5	17	16
2	9	11	10
3	1	27	28
3	2	19	18
3	3	31	31
3	5	47	48
3	7	29	28
3	9	19	19
4	1	29	28
4	2	7	5
4	3	16	17
4	4	7	6
4	7	6	5
4	8	6	2
4	9	13	12
5	2	53	54
5	3	12	11
5	4	30	28
5	5	13	13
5	6	8	8
5	8	36	34
6	1	12	12
6	2	14	14
6	3	18	18
6	4	11	10
6	7	19	18
6	8	14	13
7	1	35	34
7	2	28	27
7	3	10	10
7	4	7	7
7	5	34	33
7	6	17	16
	H=-11		
0	1	57	57
0	3	58	59
0	7	37	37
0	9	38	37
1	1	16	16
1	2	7	5
1	3	13	14
1	5	13	14
1	6	21	21
1	7	37	36
1	8	8	9
1	9	34	32
1	10	10	9
1	11	11	10
2	1	20	21
2	2	23	23
2	3	25	26
2	4	35	35
2	6	29	30
2	7	23	22
2	8	15	14
2	9	13	12
2	10	17	16
3	2	25	26
3	4	17	17
3	5	29	28
3	6	25	24
3	10	23	21
3	11	12	11
4	1	28	27
4	2	9	7
4	3	31	30
4	4	24	24
4	5	10	9
4	6	29	29
4	7	9	10
4	8	13	12
4	9	18	17
4	10	11	10
5	1	17	16
5	2	22	22
5	3	16	16
5	4	26	29
5	5	8	4
5	6	7	7
5	7	17	17
5	8	18	17
5	9	24	23
5	10	17	16
6	1	40	40
6	3	48	49
6	4	16	15
6	5	8	8
6	7	24	23
6	9	19	18
7	1	15	15
7	2	19	18
7	3	7	6
7	5	24	24
7	6	29	28
7	7	22	22
7	8	11	11
8	2	10	10
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9	3	18	17
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8	3	13	13
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8	7	14	14
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8	9	8	8
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9	8	12	12
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10	2	17	16
10	4	29	29
10	5	16	16
10	6	12	12
11	3	23	23
11	4	10	10
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0	10	13	13
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1	2	85	81
1	3	24	24
1	4	89	91
1	5	32	35
1	6	27	26
1	7	67	71
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1	9	6	6
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1	13	16	15
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2	3	22	22
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3	2	13	14
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3	10	8	7
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4	3	16	16
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4	5	12	14
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5	10	45	44
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6	4	37	38
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7	5	31	31
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Table F. (continued)

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11	1	8	8
11	2	12	13
11	3	10	11
11	4	28	28
12	1	14	13
12	3	23	24
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0	9	71	71
0	11	23	22
0	13	8	6
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1	2	11	10
1	4	12	13
1	5	19	19
1	6	22	22
1	7	29	29
1	8	15	16
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1	13	15	13
1	14	11	11
2	1	11	8
2	2	106	110
2	3	48	46
2	4	9	9
2	5	36	37
2	6	76	80
2	8	59	60
2	9	17	18
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2	12	19	19
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3	4	7	8
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3	6	46	47
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K	L	FO	FC
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4	6	48	49
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4	10	7	7
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4	12	15	16
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5	3	26	27
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5	9	31	32
5	10	22	22
5	11	28	28
6	2	20	19
6	3	87	86
6	4	11	11
6	5	57	60
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6	7	6	7
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6	9	36	37
6	10	13	12
6	11	31	31
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7	5	24	25
7	6	28	28
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7	9	24	23
7	10	14	14
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8	1	12	11
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8	4	10	11
8	6	44	44
8	8	34	35
8	10	9	9
8	11	10	9
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9	6	23	23
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9	10	11	12
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10	2	16	15
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K	L	FO	FC
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10	6	16	16
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12	3	16	17
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12	5	18	18
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0	8	52	53
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0	12	32	32
0	14	29	29
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1	2	17	15
1	3	44	44
1	4	52	57
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1	7	28	29
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2	2	6	2
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2	8	42	43
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2	10	23	25
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2	13	46	44
2	14	10	9
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3	2	42	39
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3	4	5	6
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3	12	9	8

K	L	FO	FC
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5	12	9	11
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6	2	50	51
6	3	30	29
6	4	75	79
6	5	16	17
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7	11	18	18
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8	6	25	25
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K	L	FO	FC
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K	L	FO	FC
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7	11	32	31
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9	2	50	50
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2	14	8	7
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K	L	FO	FC
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K	L	FO	FC
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13	3	16	17
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K	L	FO	FC
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K	L	FO	FC
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8	4	25	26
8	6	8	7
8	7	13	13
8	8	26	28
8	9	14	13
8	10	25	25
8	11	7	7
9	1	50	50
9	2	21	22
9	3	51	55
9	4	33	36
9	5	21	21
9	6	24	26
9	7	12	11
9	9	28	26
9	11	7	6
10	1	25	25
10	2	17	17
10	3	20	21
10	4	27	28
10	5	32	33
10	7	15	15
10	8	13	13
10	9	22	22
10	10	9	10
11	1	29	29
11	2	5	5
11	3	10	10
11	4	41	44
11	6	32	32
11	7	7	6
12	1	11	11
12	2	20	21
12	3	15	16
12	4	16	16
12	5	24	24
12	6	19	19
12	7	9	9
12	8	16	17
13	1	18	18
13	2	11	13
13	3	43	46
13	4	8	8
13	6	8	5
14	2	25	26

K	L	FO	FC
	H= -2		
0	2	69	83
0	4	16	25
0	6	83	91
0	8	30	30
0	10	50	53
0	12	66	65
1	1	93	101
1	2	31	34
1	3	76	76
1	4	98	99
1	5	7	8
1	6	132	137
1	7	43	44
1	8	35	35
1	9	31	30
1	10	25	24
1	12	19	18
1	14	11	11
2	1	69	54
2	2	41	37
2	3	93	93
2	4	12	12
2	5	57	55
2	6	20	20
2	7	60	63
2	8	7	5
2	9	88	89
2	10	26	26
2	11	20	20
2	12	20	20
2	13	38	38
3	1	153	152
3	2	11	10
3	3	112	117
3	5	52	50
3	7	83	85
3	8	28	28
3	9	62	64
3	11	11	9
3	12	10	11
4	1	82	82
4	2	23	27
4	3	38	37
4	4	32	33
4	5	23	23
4	6	59	61
4	7	71	72
4	8	29	28
4	9	31	31
4	10	39	39
4	12	45	46
4	13	34	35
5	1	20	19
5	2	11	8

K	L	FO	FC
5	3	5	9
5	4	71	77
5	6	65	68
5	8	19	19
5	9	12	12
5	10	19	19
5	11	31	31
5	12	8	7
6	1	88	88
6	2	63	66
6	4	63	65
6	5	53	52
6	6	62	62
6	8	31	31
6	9	37	37
6	10	45	44
6	11	27	27
6	12	29	29
6	13	6	4
7	1	86	89
7	2	6	7
7	3	76	79
7	4	23	22
7	5	22	21
7	6	30	30
7	7	43	43
7	8	39	38
7	9	20	21
7	12	16	16
8	1	17	16
8	2	38	42
8	3	20	20
8	4	32	31
8	5	7	8
8	6	12	18
8	7	40	40
8	8	16	16
8	9	31	32
8	10	12	11
8	11	20	21
9	1	32	32
9	2	38	40
9	3	69	71
9	4	24	25
9	5	46	47
9	7	18	17
9	9	28	28
9	10	21	20
9	11	9	9
10	1	19	19
10	2	14	14
10	3	12	12
10	4	5	4
10	5	8	10
10	6	36	35
10	7	26	25

K	L	FC	FC
10	9	14	13
10	10	16	16
11	1	28	28
11	2	29	32
11	3	13	13
11	4	29	29
11	5	26	25
11	6	28	28
11	7	22	23
12	1	19	19
12	2	17	20
12	3	16	16
12	4	32	31
12	5	29	29
12	6	12	12
12	7	11	11
13	1	22	23
13	2	15	15
13	3	22	22
13	4	16	16
13	6	7	6
14	1	17	15
14	2	22	23
14	3	8	8
	H= -1		
0	1	145	183
0	3	139	135
0	5	17	20
0	7	43	40
0	11	16	16
0	13	12	11
1	1	122	140
1	2	136	144
1	3	102	99
1	4	66	74
1	5	162	158
1	6	64	61
1	7	99	98
1	8	39	39
1	9	17	15
1	10	25	25
1	11	42	41
1	13	25	26
1	14	18	19
2	1	65	78
2	2	126	128
2	3	49	47
2	4	13	16
2	5	75	72
2	6	12	14
2	7	19	19
2	8	20	17
2	10	21	23
2	11	12	12

K	L	FO	FC
2	12	7	7
2	14	18	18
3	1	129	128
3	2	141	143
3	3	5	8
3	4	139	142
3	5	43	42
3	7	5	4
3	8	115	118
3	9	19	19
3	10	47	48
3	12	18	18
3	14	31	32
4	1	69	78
4	2	33	29
4	3	5	6
4	4	25	22
4	5	19	19
4	6	50	50
4	7	5	4
4	9	26	26
4	11	19	19
4	13	20	21
5	1	84	90
5	2	89	85
5	3	6	7
5	4	18	28
5	5	119	119
5	7	78	77
5	8	16	16
5	10	5	5
5	11	53	54
5	13	29	28
6	1	68	71
6	2	101	99
6	3	47	46
6	4	27	27
6	5	5	5
6	6	36	36
6	7	14	13
6	8	9	9
6	9	21	21
6	10	30	30
6	11	17	17
6	12	24	24
6	13	8	7
7	1	64	69
7	2	72	72
7	3	42	41
7	4	85	84
7	5	47	47
7	7	40	40
7	8	75	76
7	9	8	9
7	10	32	32
7	11	30	30

Table F. (continued)

K	L	FO	FC
8	1	15	16
8	2	54	54
8	3	50	51
8	4	16	15
8	5	16	15
8	6	7	7
8	7	32	33
8	9	30	30
8	10	16	15
9	1	43	45
9	2	73	71
9	4	47	46
9	5	26	25
9	6	6	5
9	7	32	32
9	8	58	57
9	9	6	5
9	10	32	33
9	11	16	16
10	1	24	23
10	2	10	9
10	3	9	9
10	4	45	45
10	5	12	11
10	6	20	20
10	7	6	7
10	8	12	11
10	9	14	13
10	10	14	13
11	1	29	30
11	4	8	8
11	5	49	47
11	6	14	13
11	7	35	34
11	9	10	12
12	1	26	26
12	2	21	20
12	3	22	22
12	4	18	17
12	5	7	8
12	6	24	23
12	7	13	11
13	1	18	17
13	2	30	29
13	3	23	21
13	4	20	19
13	5	14	14
14	1	10	10
14	3	33	31
	H= 0		
0	2	96	90
0	4	125	125
0	6	162	155
0	8	44	47
0	10	35	35
0	12	16	16
1	1	6	4
1	2	24	28
1	3	150	146
1	4	7	12
1	5	9	11
1	6	127	125
1	7	47	49
1	8	21	20
1	9	31	32
1	10	29	28
1	11	18	19
1	12	36	35
1	13	17	17
1	14	14	13
2	0	88	99
2	1	178	170
2	2	145	139
2	3	257	236
2	4	5	7
2	5	112	109
2	6	84	84
2	7	70	70
2	8	19	19
2	9	25	25
2	11	5	4
2	13	7	6
3	1	124	109
3	2	14	12
3	3	28	26
3	4	38	35
3	5	7	7
3	6	67	66
3	7	53	54
3	8	10	10
3	9	67	68
3	11	18	18
3	13	26	26
4	0	284	215
4	1	62	61
4	2	24	23
4	3	108	105
4	4	29	28
4	5	74	71
4	6	107	106
4	7	14	12
4	8	9	9
4	9	41	42
4	10	37	37
4	11	7	8
4	12	9	8
4	13	8	7
5	1	59	55
5	2	4	3
5	3	9	8
5	4	40	38
5	5	43	43
5	6	68	59
5	7	40	40
5	8	34	33
5	9	10	11
5	10	11	10
5	11	11	10
5	12	49	50
5	13	11	12
6	0	111	128
6	1	75	70
6	2	88	85
6	3	28	27
6	4	47	48
6	5	6	6
6	6	82	82
6	7	38	37
6	8	26	26
6	9	22	23
6	10	12	11
6	11	9	9
6	12	16	17
7	1	21	20
7	2	43	40
7	3	36	34
7	4	52	50
7	5	63	68
7	6	31	30
7	7	6	6
7	8	9	10
7	9	36	36
7	10	34	34
7	11	19	20
7	12	19	20
8	1	50	49
8	2	19	17
8	3	103	101
8	5	21	21
8	7	33	33
8	8	26	27
8	9	32	31
8	10	14	13
8	11	9	10
9	1	20	20
9	2	60	56
9	3	36	34
9	4	32	30
9	5	6	5
9	6	26	27
9	7	31	32
9	8	37	36
9	9	33	33
9	10	10	11
10	0	50	55
10	1	10	10
10	2	22	22
10	3	46	45
10	4	32	31
10	5	18	17
10	6	35	35
10	8	6	6
10	9	15	15
10	10	14	14
11	1	31	31
11	4	10	11
11	5	36	35
11	6	35	35
11	7	27	27
11	8	7	7
12	0	31	33
12	2	11	9
12	3	20	19
12	4	16	16
12	6	18	18
12	7	8	8
13	1	7	7
13	2	36	35
13	3	17	18
13	4	37	36
13	5	13	13
14	0	19	19
14	1	11	11
14	3	26	24
	H= 1		
0	1	267	263
0	3	91	79
0	5	127	126
0	7	85	87
0	11	50	58
0	13	37	38
1	0	11	13
1	1	166	157
1	2	71	73
1	3	23	19
1	4	18	15
1	5	11	15
1	6	42	39
1	7	17	17
1	8	16	17
1	9	9	7
2	0	12	9
2	1	11	4
2	2	41	49
2	3	18	16
2	4	129	128
2	5	70	69
2	7	40	39
2	8	67	67
2	10	38	38
2	11	19	20
2	12	10	10
2	13	21	22
3	0	101	99
3	1	30	27
3	2	138	122
3	3	61	56
3	4	79	77
3	5	10	7
3	6	46	46
3	7	19	19
3	8	15	17
3	9	7	6
3	11	6	7
4	0	81	68
4	1	92	89
4	2	73	69
4	3	18	20
4	4	24	29
4	5	51	50
4	6	12	10
4	7	56	54
4	8	59	60
4	10	45	45
4	11	29	28
4	13	18	17
5	0	18	18
5	1	77	77
5	2	23	20
5	3	4	3
5	4	82	75
5	5	35	36
5	6	24	24
5	7	27	26
5	8	24	24
5	9	20	19
5	12	14	14
6	0	25	27
6	1	50	51
6	2	21	19
6	4	60	58
6	5	98	94
6	6	43	40
6	7	67	65
6	9	8	8
6	10	18	17
6	11	40	40
7	0	9	10
7	1	72	67
7	2	85	84
7	3	32	33
7	4	9	8
7	5	21	20
7	6	33	31
7	7	12	11
7	8	36	37
7	9	17	17
7	11	19	20
7	12	9	9
8	0	7	5
8	1	25	25
8	2	69	65
8	3	56	52
8	4	89	85
8	5	11	10
8	6	7	8
8	7	7	7
8	8	46	45
8	10	31	31
9	0	10	10
9	1	10	8
9	2	27	27
9	3	52	48
9	4	30	28
9	5	32	31
9	6	6	6
9	7	12	13
9	9	32	32
9	10	6	7
10	0	44	45
10	1	44	43
10	2	52	50
10	3	19	19
10	5	33	32
10	6	14	15
10	7	31	30
10	8	14	14
11	0	12	11
11	1	12	12
11	2	25	24
11	5	12	11
11	6	33	32
11	7	8	6
11	8	17	15
12	0	18	19
12	1	17	16
12	2	9	7
12	3	29	28
12	4	18	17
12	5	20	19
12	6	19	19
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13	1	19	19
13	2	19	17
13	3	26	25
13	5	12	11
14	1	20	18
14	2	17	16
14	3	15	15
	H= 2		
0	0	7	15
0	2	20	18
0	4	25	21
0	6	41	41
0	8	34	33
0	12	43	44
1	0	113	97
1	1	35	33
1	2	7	9
1	3	73	62
1	4	19	18
1	5	37	36
1	6	90	98
1	7	31	31
1	8	36	36
1	9	41	41
1	10	13	14
1	11	14	14
1	12	34	36
1	13	7	7
2	1	34	31
2	2	19	20
2	3	23	22
2	4	33	31
2	5	62	58
2	6	17	18
2	9	34	34
2	11	28	28
2	12	17	16
3	0	33	24
3	1	20	24
3	2	8	14
3	3	81	79
3	5	63	63
3	6	15	13
3	7	25	24
3	8	6	6
3	9	57	57
3	11	32	33
4	0	12	8
4	1	35	28
4	2	45	41
4	4	33	31
4	5	8	5
4	6	15	14
4	7	21	19
4	8	14	14
4	9	26	26
4	10	7	6
4	11	17	18
4	12	17	17
5	0	117	116
5	1	44	36
5	2	68	69
5	3	23	22
5	4	16	14
5	5	18	16
5	6	78	73
5	8	29	28
5	9	5	4
5	10	8	8
5	12	19	18
6	0	48	43
6	1	44	43
6	2	18	15
6	3	6	5
6	4	5	2
6	5	61	60
6	6	30	30
6	7	40	40
6	8	19	19
6	10	10	10
6	11	23	23
6	12	28	28
7	0	66	66
7	1	18	18
7	2	54	52
7	3	80	74
7	4	14	12
7	5	72	67
7	6	39	39
7	7	27	25
7	8	22	21
7	9	39	38
8	1	22	20
8	2	43	41
8	3	11	10
8	4	61	58
8	5	35	36
8	6	14	15
8	7	11	13
8	8	22	21
8	9	18	17
8	10	15	15
8	11	24	23
9	0	45	43
9	1	26	26
9	2	32	30
9	3	77	74
9	5	32	30
9	6	30	30
9	9	18	19
9	10	12	14
10	0	25	24
10	1	63	62
10	2	20	20
10	3	23	21
10	4	23	22
10	5	32	30
10	6	10	11

Table F. (continued)

K	L	FO	FC
10	7	21	20
10	9	10	10
11	0	45	46
11	1	21	19
11	2	23	22
11	3	9	8
11	6	24	25
11	7	21	21
11	8	20	20
12	0	8	9
12	1	27	26
12	2	21	19
12	3	13	11
12	4	34	32
12	5	14	13
12	7	24	23
13	0	7	7
13	1	7	7
13	2	23	22
13	3	27	26
13	5	10	9
14	0	11	11
14	2	23	21
	H= 3		
0	1	188	165
0	3	43	39
0	5	54	53
0	7	67	67
0	9	12	13
0	11	7	6
1	0	12	12
1	1	35	33
1	2	19	19
1	3	61	57
1	4	64	63
1	5	32	32
1	6	40	39
1	7	96	96
1	8	18	17
1	9	49	49
1	10	46	47
1	11	31	31
1	12	14	15
1	13	42	43
2	0	82	73
2	1	5	6
2	2	43	50
2	3	17	11
2	4	66	64
2	5	5	4
2	6	26	27
2	7	12	12
2	8	34	34
3	0	15	22

K	L	FO	FC
3	1	30	30
3	2	40	38
3	3	39	35
3	4	101	97
3	5	32	30
3	6	32	32
3	8	34	35
3	9	18	18
3	10	62	62
3	12	25	25
4	0	61	61
4	1	117	109
4	2	38	35
4	3	5	7
4	4	14	16
4	5	9	10
4	6	21	22
4	7	43	43
4	12	13	12
5	0	30	28
5	1	73	67
5	2	21	20
5	3	57	54
5	4	34	34
5	5	31	30
5	6	5	2
5	7	65	63
5	8	30	31
5	9	28	28
5	11	15	16
6	0	32	30
6	1	123	121
6	2	87	82
6	3	42	40
6	4	11	10
6	5	29	29
6	6	11	10
6	7	21	21
6	8	31	31
6	9	10	9
6	11	12	13
7	0	32	32
7	1	45	43
7	2	25	24
7	4	72	71
7	5	39	38
7	6	42	42
7	7	51	51
7	8	34	36
7	10	38	39
7	11	12	13
8	0	26	25
8	1	5	3
8	2	57	56
8	3	34	32
8	4	52	52

K	L	FO	FC
8	5	40	39
8	6	10	10
8	7	7	7
8	8	15	15
8	9	30	31
8	10	7	8
9	1	17	17
9	2	47	45
9	3	47	46
9	4	62	60
9	5	12	11
9	6	10	11
9	7	22	23
9	8	22	22
9	9	10	8
10	0	24	24
10	1	70	69
10	2	34	34
10	4	31	31
10	5	19	19
10	6	35	34
10	7	15	15
10	8	21	21
11	0	44	44
11	1	22	22
11	2	34	33
11	3	10	10
11	4	9	9
11	5	8	8
11	7	37	37
12	0	11	10
12	1	25	24
12	2	14	15
12	3	46	44
12	4	14	14
12	5	12	12
12	6	13	12
13	0	13	13
13	1	9	7
13	3	13	14
13	4	21	21
14	0	19	18
	H= 4		
0	0	123	126
0	2	142	146
0	4	35	36
0	6	166	162
0	8	67	68
0	12	30	30
1	0	41	33
1	2	28	23
1	3	52	45
1	4	33	31
1	5	16	15

K	L	FO	FC
1	6	28	28
1	7	10	11
1	8	43	43
1	9	17	16
1	10	9	11
1	11	20	22
1	12	35	37
2	0	91	88
2	2	69	63
2	3	87	83
2	4	18	17
2	5	130	125
2	6	42	41
2	8	37	36
2	9	44	44
2	11	34	34
2	12	10	10
3	0	79	68
3	1	4	7
3	2	33	30
3	4	27	28
3	5	15	17
3	6	24	23
3	7	18	18
3	9	23	23
3	10	18	19
3	11	28	29
3	12	7	6
4	0	104	99
4	1	12	9
4	2	52	53
4	3	88	84
4	4	18	17
4	5	81	79
4	6	69	68
4	7	24	25
4	8	37	38
4	9	23	23
4	10	8	7
4	11	28	30
5	0	91	86
5	1	52	50
5	2	6	5
5	3	30	29
5	5	6	6
5	6	17	18
5	7	21	21
5	8	16	16
5	9	15	15
5	11	9	10
6	0	71	68
6	1	20	18
6	2	121	115
6	3	29	28
6	4	11	11
6	5	19	19

K	L	FO	FC
6	6	67	65
6	7	27	28
6	8	58	56
6	9	16	16
6	10	12	14
7	0	15	17
7	1	34	33
7	2	13	11
7	3	56	51
7	4	37	36
7	5	23	23
7	6	24	24
7	8	10	10
7	9	19	22
7	10	19	19
8	0	12	10
8	1	8	6
8	3	62	58
8	5	64	62
8	6	19	19
8	8	10	9
8	9	40	40
8	10	10	9
9	0	62	61
9	1	7	7
9	3	17	16
9	4	38	37
9	6	16	15
9	7	16	16
9	8	18	18
9	9	29	30
10	0	36	34
10	1	7	8
10	2	51	51
10	3	22	22
10	5	19	19
10	6	32	31
10	7	6	4
10	8	28	28
11	0	19	19
11	1	42	41
11	2	7	5
11	3	24	24
11	5	11	11
11	6	9	9
11	7	17	17
12	0	15	14
12	1	9	8
12	2	25	24
12	3	10	9
12	4	11	9
12	5	15	14
13	0	12	12
13	1	12	12
13	2	14	15

K	L	FO	FC
	H= 5		
0	1	81	77
0	3	113	104
0	5	53	49
0	7	119	120
0	9	32	33
0	11	12	14
1	0	126	116
1	1	171	156
1	2	15	14
1	3	52	51
1	4	93	89
1	5	6	8
1	6	47	47
1	7	49	47
1	8	13	13
1	11	11	11
2	0	44	40
2	1	121	109
2	2	13	9
2	3	25	22
2	4	93	89
2	5	44	42
2	6	66	66
2	7	41	40
2	8	8	8
2	9	13	14
2	10	53	53
2	11	14	13
3	0	113	110
3	1	61	55
3	2	23	24
3	3	8	9
3	4	91	86
3	6	78	80
3	7	45	47
3	9	13	11
3	10	6	6
3	11	14	13
4	0	38	37
4	1	29	27
4	2	42	41
4	3	47	44
4	4	83	82
4	6	33	33
4	7	52	53
4	8	14	13
4	9	27	27
4	10	23	23
5	0	24	22
5	1	113	118
5	2	21	20
5	3	48	46
5	4	14	14
5	6	26	25

K	L	FO	FC
5	7	27	26
5	8	36	36
5	9	12	13
5	10	8	7
6	0	42	40
6	1	69	67
6	2	31	30
6	3	39	38
6	4	26	28
6	5	31	31
6	6	15	14
6	7	45	45
6	9	30	31
6	10	7	6
7	0	49	48
7	1	16	15
7	2	25	25
7	3	55	54
7	4	22	21
7	5	19	18
7	6	6	6
7	7	6	7
7	8	12	13
7	9	21	21
8	0	24	28
8	1	14	13
8	2	13	12
8	3	18	17
8	4	44	44
8	5	20	19
8	6	31	31
8	8	14	14
8	9	8	7
9	0	38	39
9	1	24	23
9	2	8	7
9	4	23	23
9	5	20	20
9	7	11	11
9	8	12	12
10	0	6	4
10	1	13	12
10	2	33	34
10	3	34	32
10	4	31	31
10	6	9	9
10	7	24	24
11	0	10	9
11	1	36	36
11	2	21	21
11	3	13	13
11	4	10	11
11	6	7	7
12	0	25	24
12	1	13	11
12	2	24	24

K	L	FO	FC
12	3	7	2
12	4	7	6
13	0	15	14
13	2	8	6
	H= 6		
0	0	11	0
0	2	65	63
0	4	28	28
0	6	63	64
1	0	130	120
1	1	58	58
1	2	115	114
1	3	46	44
1	4	39	38
1	5	84	82
1	6	45	45
1	7	22	22
1	8	52	52
1	9	10	11
1	10	16	17
1	11	25	25
2	0	6	7
2	1	44	42
2	2	13	12
2	3	7	7
2	4	41	40
2	6	15	15
2	7	9	10
2	10	14	14
2	11	29	30
3	1	40	39
3	2	21	20
3	3	69	67
3	4	43	40
3	5	130	130
3	7	35	35
3	8	21	22
3	9	29	30
4	0	8	9
4	1	28	30
4	2	40	37
4	3	10	10
4	4	18	16
4	5	22	22
4	6	9	9
4	7	25	25
4	8	15	16
4	9	11	11
4	10	14	14
5	0	59	55
5	1	13	11
5	2	116	112
5	3	22	21
5	4	43	43

Table F. (concluded)

K	L	FO	FC
5	5	13	12
5	6	38	39
5	7	20	19
5	8	46	46
5	9	8	9
5	10	25	25
6	0	9	9
6	1	26	26
6	2	29	31
6	3	8	9
6	4	52	52
6	5	44	44
6	7	14	14
6	9	15	16
7	0	46	48
7	2	37	36
7	3	21	21
7	4	20	20
7	5	47	46
7	6	24	24
7	7	20	20
7	8	31	32
7	9	14	15
8	0	23	22
8	1	32	32
8	2	19	18
8	3	13	13
8	4	28	28
8	6	21	20
8	7	6	8
9	2	16	14
9	3	42	42
9	4	24	25
9	5	36	36
9	6	7	8
10	0	24	23
10	1	32	31
10	2	10	8
10	3	41	41
10	6	8	7
11	0	33	33
11	1	16	16
11	2	39	39
11	3	9	9
11	4	10	9
11	5	9	9
12	0	15	15
12	1	24	23
12	2	8	11
12	3	20	20
13	0	8	8
	H= 7		
0	1	86	85
0	3	70	70
0	5	23	22
0	7	38	38
0	9	24	24
1	0	31	30
1	2	13	14
1	3	8	18
1	4	10	9
1	6	28	28
1	7	23	23
1	8	6	6
1	9	20	21
1	10	14	13
2	0	105	107
2	1	25	26
2	2	5	3
2	3	41	39
2	4	58	58
2	5	13	12
2	6	43	43
2	7	12	10
2	8	14	15
2	9	9	9
2	10	16	16
3	0	11	10
3	1	7	6
3	2	20	28
3	3	33	31
3	4	32	30
3	5	42	43
3	6	46	46
3	7	7	5
3	8	8	7
3	9	14	15
3	10	30	31
4	0	104	100
4	1	85	81
4	2	11	10
4	3	59	59
4	4	51	58
4	5	14	14
4	6	44	44
4	7	35	34
5	0	15	14
5	2	32	32
5	3	46	46
5	4	6	7
5	5	10	11
5	6	18	17
5	7	25	26
5	8	7	5
5	9	33	35
6	0	16	16
6	1	62	61
6	2	18	17
6	3	71	70
6	4	7	6
6	5	26	25
6	7	44	44
6	8	11	11
6	9	22	22
7	1	12	12
7	2	12	12
7	4	15	16
7	5	26	26
7	6	26	27
7	7	23	23
7	6	18	17
8	0	48	48
8	1	10	9
8	2	14	14
8	3	11	11
8	4	35	34
8	6	32	32
8	7	10	10
9	0	15	14
9	1	21	21
9	2	30	29
9	3	27	27
9	4	35	35
9	5	23	23
9	6	7	6
10	0	16	16
10	1	34	38
10	3	31	30
11	0	16	18
11	1	10	10
11	2	36	36
11	3	16	16
11	4	10	18
12	0	21	20
12	1	19	20
	H= 8		
0	0	20	20
0	2	54	53
0	4	45	43
0	6	11	12
0	8	39	40
1	1	17	15
1	2	36	33
1	4	16	16
1	5	14	13
2	0	12	11
2	1	57	55
2	2	21	22
2	3	16	17
2	4	24	24
2	5	45	46
2	7	24	25
2	8	15	15
2	9	8	10
3	0	54	54
3	1	35	33
3	3	17	17
3	4	16	15
3	6	16	16
3	7	7	7
3	8	10	11
4	1	52	52
4	2	71	71
4	3	6	6
4	4	39	38
4	5	58	59
4	6	20	28
4	7	19	20
4	8	26	27
5	0	30	30
5	1	24	24
5	2	46	45
5	3	29	28
5	4	13	12
5	6	23	23
6	0	28	28
6	1	17	16
6	2	54	53
6	3	14	14
6	4	50	51
6	5	13	13
6	6	12	12
6	7	9	9
6	8	42	43
7	0	15	15
7	2	12	12
7	3	14	14
7	4	13	14
7	5	20	28
7	6	19	28
8	0	21	21
8	1	30	29
8	2	11	18
8	4	8	7
8	5	43	44
8	6	11	18
9	0	24	23
9	1	28	28
9	2	19	18
9	3	10	10
9	4	23	23
10	1	9	8
10	2	26	26
10	3	19	20
10	4	36	35
11	0	9	8
11	1	21	21
11	2	14	14
	H= 9		
0	1	8	7
0	3	37	36
0	7	32	33
1	0	47	47
1	1	33	32
1	2	24	24
1	3	58	57
1	4	28	29
1	5	23	24
1	6	24	24
1	7	19	19
1	8	7	7
2	0	12	13
2	2	9	8
2	4	23	23
2	6	27	27
2	7	12	14
2	8	16	17
3	0	96	97
3	1	24	23
3	2	21	22
3	4	37	37
3	6	48	48
3	7	13	13
3	8	11	11
4	0	22	22
4	1	13	13
4	3	33	33
4	4	24	24
4	5	8	9
4	6	37	37
4	7	7	7
5	0	15	14
5	1	46	44
5	3	63	61
5	6	9	9
5	7	26	26
6	0	13	11
6	1	15	14
6	2	38	39
6	3	17	16
6	4	30	30
7	0	45	45
7	1	27	27
7	2	10	9
7	3	17	18
7	4	20	20
7	5	18.	17
7	6	34	34
8	1	28	27
8	2	18	18
8	5	17	17
9	0	41	41
9	1	19	19
9	2	15	15
9	3	12	11
9	4	9	10
10	1	15	14
10	2	24	23
	H= 10		
0	2	27	26
0	4	29	28
0	6	21	21
1	1	26	27
1	2	27	26
1	4	40	40
1	5	29	30
1	7	19	18
2	0	11	11
2	1	14	11
2	2	10	11
2	3	11	11
2	4	18	18
2	5	22	22
2	6	8	8
2	7	14	14
3	1	38	37
3	2	14	13
3	5	52	53
3	6	9	9
3	7	43	44
4	0	14	13
4	1	33	32
4	2	15	15
4	4	18	18
5	0	8	8
5	2	31	31
5	3	22	23
5	4	41	41
5	5	20	20
6	1	8	9
6	2	16	17
6	3	18	16
6	4	18	18
6	5	18	18
7	0	19	19
7	1	35	35
7	2	30	30
7	3	14	14
7	4	10	12
8	0	24	23
8	1	25	25
8	2	11	11
8	3	6	5
9	0	18	17
9	1	22	22
10	0	10	9
	H= 11		
0	1	21	21
0	3	65	67
0	5	47	47
1	0	10	11
1	2	10	10
1	3	10	9
1	4	11	18
1	6	13	13
2	0	51	51
2	2	39	38
2	3	25	25
2	4	8	9
2	5	20	28
3	1	13	13
3	4	14	14
3	5	9	8
4	0	39	39
4	2	27	28
4	3	35	35
4	4	7	8
4	5	32	32
5	0	21	21
5	2	8	10
5	3	7	8
5	4	14	15
6	0	15	15
6	1	9	8
6	2	16	15
6	3	42	43
7	0	13	12
7	1	27	27
7	2	11	11
7	3	11	18
8	0	45	46
	H= 12		
0	0	13	12
0	2	25	25
0	4	52	54
1	0	19	19
1	1	34	35
1	2	21	23
1	3	8	9
1	4	33	34
2	1	29	29
2	2	13	13
2	3	20	20
2	4	14	14
3	1	52	51
3	2	10	9
3	3	25	25
4	1	22	24
4	2	7	6
5	0	14	14
5	2	21	22
7	0	17	18
	H= 13		
0	1	7	7
1	0	38	29
1	2	25	25
2	0	21	21
2	1	9	18
3	0	45	45
4	1	7	7

Table G. Observed (FO) and Calculated (FC) Structure Factors for Cu_2(Dapsa)(OAc)· $2CH_3CN$.

K	L	FO	FC
	H=-21		
1	2	23	21
1	3	12	15
1	4	11	11
1	6	24	23
3	1	27	26
3	2	18	17
3	4	11	12
3	5	14	13
	H=-20		
0	2	37	35
0	6	28	25
2	1	17	19
2	2	48	46
2	3	20	20
2	4	19	16
2	5	18	18
2	6	29	28
4	1	29	28
4	2	34	34
4	5	21	20
	H=-19		
1	1	9	9
1	2	64	62
1	3	9	11
1	5	17	15
1	6	33	31
1	7	16	15
1	8	13	14
3	1	28	27
3	2	64	62
3	4	23	25
3	5	22	22
3	6	40	39
3	7	11	10
5	1	14	12
5	2	21	19
5	3	21	21
5	5	21	20
5	6	21	21
	H=-18		
0	2	67	63
0	4	21	19
0	6	36	34
2	1	25	24
2	2	68	66
2	4	36	36
2	5	12	11
2	6	45	44

K	L	FO	FC
2	7	16	15
2	9	16	15
4	1	16	16
4	2	31	30
4	3	35	32
4	4	12	13
4	5	17	17
4	6	31	33
4	7	18	15
4	8	17	15
6	1	11	10
6	2	21	20
6	3	18	17
6	5	21	21
6	6	10	12
	H=-17		
1	2	55	51
1	5	20	20
1	6	35	33
1	7	11	10
1	8	12	13
3	1	15	14
3	2	46	44
3	3	42	41
3	4	12	9
3	5	18	19
3	6	32	31
3	7	15	15
3	8	15	14
3	9	20	19
5	1	13	11
5	2	21	20
5	3	31	30
5	6	22	22
5	7	25	23
5	8	11	12
7	3	22	22
7	4	11	9
7	5	12	11
	H=-16		
0	2	64	59
0	4	20	17
0	6	8	5
0	8	20	16
0	10	55	53
2	1	9	12
2	2	44	43
2	3	35	34
2	4	30	27
2	5	18	18
2	6	40	37
2	7	30	28

K	L	FO	FC
2	8	31	29
2	10	38	37
4	1	8	7
4	2	32	31
4	3	45	44
4	4	24	24
4	6	23	21
4	7	26	23
4	8	23	22
4	9	13	14
6	2	9	9
6	3	23	20
6	7	34	34
8	3	36	41
8	5	9	6
	H=-15		
1	1	18	18
1	2	38	37
1	3	17	16
1	4	74	71
1	5	13	13
1	6	10	9
1	7	28	25
1	8	36	34
1	9	11	11
1	10	43	42
3	1	12	11
3	2	47	46
3	3	52	50
3	4	75	74
3	6	48	47
3	7	43	41
3	8	48	48
3	10	25	24
5	2	18	21
5	3	35	32
5	4	15	12
5	5	16	18
5	7	32	31
5	8	24	26
7	1	16	15
7	3	35	38
7	4	9	13
7	7	38	44
9	3	29	37
	H=-14		
0	2	31	29
0	4	115	110
0	6	19	20
0	8	55	53
0	10	34	33
2	1	7	8

K	L	FO	FC
2	2	37	36
2	3	49	47
2	4	92	89
2	5	9	10
2	6	77	75
2	7	31	30
2	8	60	57
2	10	25	24
2	11	23	21
4	1	20	18
4	2	31	29
4	3	51	49
4	4	44	44
4	5	34	33
4	6	32	31
4	7	41	41
4	8	44	46
6	3	31	31
6	4	27	27
6	5	16	15
6	7	48	49
6	8	15	18
8	1	12	15
8	3	35	42
8	5	11	12
8	7	33	43
	H=-13		
1	1	17	17
1	2	15	14
1	3	18	18
1	4	111	101
1	5	9	8
1	6	54	53
1	7	18	20
1	8	65	61
1	10	21	20
3	1	11	9
3	2	7	8
3	3	43	42
3	4	86	82
3	5	47	44
3	6	49	49
3	7	55	54
3	8	52	51
3	10	9	8
3	11	27	28
5	1	21	21
5	3	36	36
5	4	39	39
5	5	33	33
5	6	30	30
5	7	31	32
5	8	31	33
5	9	12	11

K	L	FO	FC
7	1	19	20
7	2	22	24
7	3	24	27
7	4	13	13
7	5	18	19
7	6	10	12
7	7	40	43
7	8	10	11
9	1	14	13
9	2	12	16
9	3	30	39
9	4	11	9
9	5	15	22
	H=-12		
0	2	40	37
0	4	122	118
0	6	29	29
0	8	9	9
0	10	10	13
0	12	56	54
2	1	46	44
2	2	55	51
2	3	35	34
2	4	132	97
2	5	38	35
2	6	37	36
2	8	66	65
2	9	23	23
2	11	19	18
2	12	40	41
4	1	56	55
4	2	10	7
4	3	44	42
4	4	65	63
4	5	53	53
4	6	9	10
4	7	44	44
4	8	40	39
4	11	28	28
6	1	43	44
6	2	18	19
6	3	16	15
6	4	20	21
6	5	20	19
6	6	8	10
6	7	33	33
6	8	14	14
6	9	23	26
8	1	25	29
8	3	33	36
8	5	35	41
8	6	11	7
8	7	31	36
10	1	14	20

K	L	FO	FC
10	2	10	15
10	3	19	20
	H=-11		
1	1	38	37
1	2	60	59
1	3	36	37
1	4	106	99
1	5	28	28
1	6	16	16
1	8	16	13
1	9	27	26
1	12	50	52
3	1	33	31
3	2	36	37
3	3	36	36
3	4	100	99
3	5	60	56
3	6	24	26
3	7	32	31
3	8	60	59
3	9	36	36
3	10	24	25
3	11	21	21
3	12	37	37
5	1	109	118
5	2	9	8
5	3	30	31
5	4	46	47
5	5	49	49
5	6	14	14
5	7	13	11
5	8	11	12
5	9	19	18
5	10	14	14
5	11	18	22
7	1	65	70
7	2	32	34
7	4	9	7
7	5	45	51
7	7	31	39
7	9	33	40
9	1	29	37
9	2	17	22
9	3	27	32
9	5	36	42
9	7	24	29
	H=-10		
0	2	22	19
0	4	133	127
0	6	90	86
0	8	28	29
0	10	43	41

K	L	FC	FC
0	12	50	50
2	1	31	28
2	2	64	60
2	3	42	40
2	4	122	115
2	5	58	54
2	6	52	51
2	7	33	32
2	8	95	92
2	9	28	27
2	10	37	37
2	12	44	46
4	1	116	117
4	2	53	52
4	3	13	13
4	4	83	81
4	5	78	76
4	6	14	15
4	7	9	12
4	8	37	36
4	9	40	42
4	10	33	38
4	11	13	13
4	12	26	25
6	1	105	112
6	3	27	29
6	4	16	17
6	5	36	40
6	6	16	16
6	7	9	12
6	9	45	46
8	1	74	83
8	4	9	9
8	5	51	59
8	7	13	16
8	9	37	45
10	1	37	46
10	2	19	24
10	3	16	18
10	4	15	16
10	5	23	35
	H= -9		
1	1	41	39
1	2	89	89
1	3	36	31
1	4	105	100
1	5	27	26
1	6	97	95
1	7	11	10
1	8	68	65
1	9	13	13
1	10	67	65
1	12	47	48
3	1	96	94

K	L	FO	FC
3	2	104	102
3	3	38	36
3	4	89	86
3	5	73	69
3	6	71	67
3	7	13	12
3	8	68	69
3	9	60	60
3	10	47	47
3	11	14	12
3	12	27	30
5	1	101	99
5	2	26	25
5	3	22	22
5	4	38	31
5	5	64	64
5	6	32	35
5	7	10	18
5	8	39	42
5	9	39	41
5	10	30	34
7	1	115	123
7	2	15	19
7	3	11	13
7	4	19	22
7	5	37	40
7	6	8	8
7	9	44	52
7	10	9	18
9	1	65	74
9	2	12	11
9	3	14	16
9	4	14	16
9	5	47	59
9	8	18	12
11	1	29	36
11	2	17	23
11	4	11	14
	H= -8		
0	2	134	138
0	4	66	64
0	6	122	119
0	8	65	65
0	10	17	18
0	12	41	43
2	1	89	88
2	2	90	89
2	3	134	124
2	5	69	67
2	6	92	92
2	7	16	16
2	8	78	76
2	9	24	24
2	10	74	75

Table G. (continued)

K	L	FC	FC
2	12	32	36
2	13	19	19
4	1	109	112
4	2	83	86
4	3	16	15
4	4	71	68
4	5	69	69
4	6	53	51
4	7	40	40
4	8	39	41
4	9	60	63
4	10	39	43
4	11	12	13
4	12	12	14
6	1	97	100
6	2	47	50
6	4	10	11
6	5	47	49
6	6	22	24
6	8	19	21
6	9	51	51
6	10	14	15
8	1	88	97
8	2	12	12
8	4	12	13
8	5	55	61
8	7	19	19
8	9	46	53
10	1	36	44
10	2	11	13
10	5	32	42
10	7	12	13

H= -7

K	L	FC	FC
1	2	142	134
1	3	12	7
1	4	18	16
1	5	35	35
1	6	119	114
1	7	16	15
1	8	51	50
1	10	23	22
1	11	21	20
1	12	30	30
3	1	27	27
3	2	136	136
3	3	32	27
3	4	21	23
3	5	59	57
3	6	117	114
3	7	37	36
3	8	39	39
3	9	53	55
3	10	60	63
3	11	8	11

K	L	FO	FC
3	12	14	15
3	13	21	27
5	1	52	51
5	2	43	44
5	3	77	77
5	4	45	46
5	5	57	56
5	6	39	39
5	7	45	44
5	8	35	35
5	9	42	41
5	10	17	19
7	1	99	106
7	2	75	79
7	3	28	28
7	4	39	40
7	5	12	11
7	6	17	18
7	7	32	34
7	9	55	60
7	11	14	17
9	1	29	33
9	2	25	29
9	4	18	13
9	5	46	52
9	7	26	26
9	9	39	49
11	1	30	33
11	2	17	22
11	3	14	17
11	5	14	24

H= -6

K	L	FO	FC
0	2	189	190
0	4	7	8
0	6	182	181
0	8	18	18
0	10	17	14
2	1	32	28
2	2	178	173
2	3	31	27
2	5	51	50
2	6	140	137
2	7	40	40
2	8	15	14
2	9	51	51
2	10	77	77
2	11	10	9
2	13	12	15
4	1	30	33
4	2	50	48
4	3	93	90
4	4	25	25
4	6	108	105
4	7	60	60

K	L	FO	FC
4	8	30	31
4	9	23	20
4	10	36	35
4	11	16	16
6	1	83	86
6	2	63	66
6	3	75	78
6	5	54	52
6	6	29	29
6	7	30	31
6	9	45	48
6	10	9	9
6	11	16	18
8	1	38	40
8	3	53	54
8	5	18	18
8	6	10	11
8	7	47	50
8	9	41	43
10	1	22	26
10	2	18	21
10	3	27	31
10	4	18	16
10	5	28	36
10	6	16	19
10	7	22	26
12	1	16	20
12	2	22	26

H= -5

K	L	FO	FC
1	1	141	128
1	2	94	82
1	3	27	28
1	4	40	40
1	5	43	40
1	6	155	149
1	7	12	10
1	8	26	26
1	9	20	21
1	10	47	47
1	11	13	13
1	12	27	28
3	1	28	28
3	2	79	87
3	3	118	111
3	4	94	87
3	5	54	52
3	6	126	123
3	7	83	81
3	8	16	16
3	9	27	28
3	10	61	64
3	11	32	33
3	12	17	17
3	13	23	23

K	L	FO	FC
5	1	29	31
5	2	68	68
5	3	105	107
5	4	17	16
5	5	51	52
5	6	55	55
5	7	66	67
5	9	23	25
5	10	31	33
5	11	22	23
5	12	15	17
7	1	64	64
7	2	33	32
7	3	131	137
7	4	19	28
7	5	44	43
7	7	36	38
7	9	38	40
7	11	26	30
9	1	13	12
9	2	32	35
9	3	67	70
9	4	16	17
9	5	32	36
9	6	12	13
9	7	55	59
9	9	26	35
11	1	24	27
11	2	16	17
11	3	38	33
11	4	18	19
11	5	15	18
11	6	16	19

H= -4

K	L	FO	FC
0	2	54	71
0	4	105	104
0	6	145	143
0	8	57	58
0	10	60	60
0	12	9	11
2	1	28	25
2	2	153	144
2	3	65	67
2	4	67	64
2	5	149	137
2	6	100	100
2	7	65	65
2	8	25	26
2	9	9	7
2	10	70	73
2	11	19	20
2	12	40	44
4	1	33	31
4	2	116	114

K	L	FO	FC
4	3	186	181
4	4	51	51
4	5	30	29
4	6	111	109
4	7	82	81
4	8	8	8
4	10	49	50
4	11	38	40
4	12	24	26
4	13	18	21
6	1	26	25
6	2	45	45
6	3	125	124
6	4	36	36
6	5	24	22
6	7	60	61
6	8	11	14
6	9	31	33
6	10	17	19
6	11	36	37
6	12	10	10
8	1	10	11
8	2	21	22
8	3	118	119
8	4	16	16
8	5	43	44
8	6	10	8
8	7	62	64
8	9	14	15
10	2	9	9
10	3	50	53
10	4	15	14
10	5	26	27
10	7	40	44
12	2	29	32
12	3	32	34

H= -3

K	L	FO	FC
1	1	12	0
1	2	204	195
1	3	55	45
1	4	159	158
1	5	52	48
1	6	119	118
1	7	38	37
1	8	66	69
1	9	13	14
1	10	67	69
1	12	18	18
3	1	23	25
3	2	92	92
3	3	48	48
3	4	123	124
3	5	97	94
3	6	87	86

K	L	FO	FC
3	7	57	56
3	8	58	58
3	10	55	57
3	11	42	43
3	12	44	47
3	13	9	5
5	1	27	24
5	2	79	77
5	3	102	104
5	4	47	46
5	6	79	79
5	7	68	67
5	8	7	9
5	10	39	40
5	11	34	34
5	12	12	13
7	2	14	12
7	3	149	152
7	4	82	82
7	5	31	31
7	6	34	33
7	7	28	29
7	8	20	20
7	10	8	2
7	11	45	47
9	2	8	9
9	3	51	52
9	4	32	33
9	5	36	36
9	7	50	52
11	1	14	15
11	2	14	15
11	3	52	51
11	4	20	21
11	6	9	12

H= -2

K	L	FO	FC
0	2	24	21
0	4	131	143
0	6	82	85
0	8	169	108
0	10	21	22
2	1	50	48
2	2	60	61
2	3	9	3
2	4	193	185
2	5	108	101
2	6	92	90
2	7	39	39
2	8	80	83
2	10	51	51
2	11	41	40
2	12	46	47
4	1	99	92
4	2	98	92

K	L	FC	FC
4	3	113	110
4	4	43	45
4	5	24	22
4	6	23	22
4	7	42	42
4	8	62	61
4	9	22	21
4	10	47	47
4	11	31	33
4	12	24	25
6	1	11	13
6	2	34	34
6	3	158	159
6	4	71	69
6	5	16	13
6	6	26	26
6	7	52	52
6	8	19	20
6	11	47	49
8	1	32	31
8	3	91	88
8	4	13	12
8	5	7	6
8	7	31	31
8	8	14	15
8	9	16	16
10	1	13	14
10	3	49	49
10	4	19	19
10	7	36	39
10	8	13	12
12	1	9	11
12	2	14	13
12	3	34	35
12	4	28	21

H= -1

K	L	FC	FC
1	1	14	16
1	2	8	6
1	3	88	88
1	4	180	185
1	5	8	6
1	6	63	66
1	7	22	21
1	8	103	103
1	10	24	26
1	11	25	25
1	12	27	27
1	13	12	12
3	1	119	126
3	2	110	105
3	3	83	78
3	4	75	77
3	5	23	25
3	6	16	19

K	L	FO	FC
3	7	42	43
3	8	82	88
3	9	44	44
3	10	24	25
3	11	34	36
3	12	38	40
5	1	163	143
5	2	44	44
5	3	98	98
5	4	69	70
5	5	45	43
5	6	43	45
5	7	49	49
5	8	46	47
5	9	34	32
5	10	23	22
5	11	37	37
5	12	17	21
7	1	40	42
7	3	112	108
7	4	46	44
7	5	69	69
7	7	44	43
7	9	15	16
7	11	45	46
9	1	24	23
9	2	15	17
9	3	49	48
9	4	28	28
9	5	22	22
9	6	10	9
9	7	35	38
9	8	12	12
9	9	31	31
11	1	39	38
11	2	9	9
11	3	48	48
11	4	28	19
11	5	12	11

H= 0

K	L	FO	FC
0	2	30	26
0	4	146	150
0	6	13	13
0	8	116	118
0	12	33	33
2	0	138	140
2	1	15	27
2	2	29	28
2	3	18	20
2	4	129	135
2	5	9	7
2	6	11	7
2	7	92	91
2	8	97	99

Table G. (continued)

K	L	FO	FC
2	9	29	28
2	10	16	15
2	11	19	22
2	12	49	50
4	0	171	167
4	1	128	123
4	2	72	61
4	3	23	24
4	4	109	111
4	5	107	103
4	6	17	14
4	7	31	29
4	8	81	80
4	9	59	59
4	10	23	21
4	11	22	24
4	12	34	35
4	13	12	12
6	0	117	108
6	1	89	87
6	2	11	12
6	3	109	105
6	4	60	57
6	5	66	64
6	7	33	32
6	8	11	10
6	9	33	34
6	11	40	42
6	12	10	13
8	0	9	4
8	1	47	46
8	2	8	6
8	3	55	54
8	4	21	21
8	5	70	69
8	6	14	15
8	7	49	48
8	9	40	40
10	0	25	24
10	1	36	35
10	3	39	37
10	4	17	15
10	5	26	25
10	6	14	10
10	7	30	30
12	0	46	45
12	1	23	23
12	3	22	22
12	4	35	33
	H= 1		
1	0	314	353
1	1	85	107
1	2	34	30
1	3	12	12

K	L	FO	FC
1	4	162	169
1	5	15	15
1	6	73	75
1	7	34	33
1	8	111	107
1	9	23	23
1	10	14	16
1	11	20	18
1	12	51	49
3	0	163	152
3	1	12	6
3	2	23	19
3	3	35	32
3	4	102	100
3	5	40	43
3	6	48	47
3	7	96	96
3	8	88	90
3	9	39	39
3	11	17	19
3	12	42	43
3	13	15	16
5	0	127	118
5	1	159	148
5	2	71	67
5	3	80	83
5	4	57	56
5	5	84	86
5	6	13	13
5	7	30	31
5	8	57	57
5	9	57	57
5	10	11	8
5	11	27	27
5	12	27	29
7	0	38	37
7	1	73	73
7	3	80	76
7	4	29	29
7	5	109	106
7	6	54	52
7	7	51	51
7	8	14	12
7	9	26	27
7	10	11	12
7	11	29	28
9	1	49	46
9	2	10	13
9	3	39	37
9	4	14	13
9	5	38	37
9	6	24	23
9	7	52	48
9	9	40	36
11	0	42	40
11	1	58	49

K	L	FC	FC
11	3	14	11
11	4	25	22
11	5	42	39
11	6	14	11
	H= 2		
0	0	254	255
0	2	76	57
0	4	90	93
0	6	80	81
0	8	123	123
0	10	33	33
0	12	34	34
2	0	78	79
2	1	203	190
2	2	144	130
2	3	44	53
2	4	78	91
2	5	25	26
2	6	88	83
2	7	85	84
2	8	102	99
2	9	29	27
2	10	21	20
2	11	18	18
2	12	48	45
2	13	20	18
4	0	83	84
4	1	77	79
4	2	19	14
4	3	6	9
4	4	97	94
4	5	81	83
4	6	23	22
4	7	23	21
4	8	48	45
4	9	45	45
4	10	10	12
4	11	9	8
4	12	41	38
4	13	18	17
6	0	46	48
6	1	121	119
6	3	49	48
6	4	39	40
6	5	141	140
6	6	48	46
6	7	56	53
6	8	33	32
6	9	44	43
6	11	31	28
8	1	65	64
8	3	14	14
8	5	77	75
8	6	14	11

K	L	FO	FC
8	7	38	36
8	8	8	4
8	9	29	27
8	10	13	12
10	0	16	13
10	1	67	61
10	2	7	9
10	3	18	16
10	4	12	12
10	5	44	41
10	6	13	10
10	7	25	22
12	0	29	27
12	1	32	29
12	2	11	9
	H= 3		
1	0	145	144
1	1	108	113
1	2	133	138
1	3	99	91
1	4	61	66
1	5	30	30
1	6	78	81
1	7	27	27
1	8	113	112
1	10	37	36
1	12	36	36
1	13	15	13
3	0	61	60
3	1	41	30
3	2	38	39
3	3	66	61
3	4	90	91
3	5	62	62
3	6	59	63
3	7	29	29
3	8	65	65
3	9	36	34
3	10	29	30
3	12	37	35
3	13	21	20
5	0	7	6
5	1	138	128
5	2	59	57
5	3	56	48
5	4	67	68
5	5	95	95
5	6	38	37
5	7	17	16
5	8	50	49
5	9	37	36
5	10	17	17
5	12	23	21
7	0	11	13

K	L	FO	FC
7	1	73	71
7	2	15	16
7	3	23	22
7	5	98	93
7	6	43	41
7	9	32	30
7	11	11	10
9	1	49	46
9	3	9	9
9	4	17	17
9	5	49	46
9	6	16	15
9	7	15	13
9	9	32	29
11	0	17	15
11	1	55	54
11	2	25	22
11	3	9	10
11	4	20	17
11	5	49	44
11	6	15	13
	H= 4		
0	0	74	70
0	2	577	637
0	4	38	39
0	5	7	0
0	6	116	116
0	8	72	72
0	10	52	52
0	12	26	24
2	0	12	15
2	1	43	43
2	2	86	87
2	3	10	12
2	4	33	33
2	5	18	17
2	6	81	83
2	7	22	23
2	8	55	55
2	9	47	45
2	10	46	39
2	12	26	26
2	13	18	17
4	0	16	9
4	1	153	147
4	2	95	94
4	1	50	48
4	4	53	54
4	5	71	72
4	6	69	69
4	7	9	6
4	8	47	46
4	9	24	24
4	10	33	33

K	L	FO	FC
4	11	19	16
4	12	30	26
6	0	39	38
6	1	103	97
6	2	74	70
6	3	23	22
6	5	111	109
6	6	47	46
6	8	22	21
6	9	28	27
8	0	8	10
8	1	63	62
8	2	11	8
8	3	9	6
8	5	63	61
8	6	10	8
8	7	9	8
8	9	35	34
10	1	46	42
10	2	16	13
10	3	9	10
10	4	15	14
10	5	48	45
10	6	15	11
12	0	15	14
12	1	31	29
12	2	32	31
12	3	9	9
	H= 5		
1	0	90	88
1	1	6	6
1	2	295	306
1	3	84	89
1	4	74	79
1	5	41	42
1	6	110	112
1	8	24	27
1	9	19	21
1	10	50	47
1	12	11	10
1	13	14	12
3	0	6	3
3	1	102	105
3	2	100	103
3	3	9	6
3	4	16	14
3	5	26	28
3	6	69	69
3	7	8	8
3	8	13	15
3	9	56	54
3	10	43	42
3	11	18	14
3	12	20	18

K	L	FO	FC
5	0	8	6
5	1	148	137
5	2	121	113
5	3	95	95
5	4	70	69
5	5	109	107
5	6	45	45
5	7	25	25
5	8	26	25
5	9	27	25
5	10	22	23
5	11	27	26
5	12	17	13
7	0	20	18
7	1	61	61
7	2	34	32
7	3	45	46
7	5	93	92
7	6	25	25
7	7	39	37
7	8	22	20
7	9	39	39
9	1	36	33
9	3	23	22
9	4	13	14
9	5	46	43
9	6	8	7
9	8	10	10
9	9	36	33
11	1	50	48
11	2	33	32
11	3	27	27
11	4	17	16
11	5	28	26
	H= 6		
0	0	132	116
0	2	292	290
0	3	6	0
0	4	67	66
0	6	94	98
0	10	68	67
2	0	18	14
2	1	16	11
2	2	167	175
2	3	93	95
2	4	109	110
2	5	44	42
2	6	90	94
2	9	44	42
2	10	58	55
2	11	11	10
2	12	9	8
2	13	19	15
4	4	58	50

K	L	FO	FC
4	1	92	85
4	2	113	115
4	3	61	63
4	4	53	53
4	5	41	43
4	6	67	69
4	7	30	32
4	8	18	12
4	9	28	28
4	10	25	26
4	11	25	24
6	1	63	60
6	2	54	53
6	3	66	64
6	4	20	17
6	5	82	82
6	6	29	30
6	7	59	58
6	8	15	14
6	9	41	41
6	10	19	18
6	11	21	20
8	1	49	48
8	3	42	42
8	5	48	48
8	7	38	38
8	8	9	5
8	9	35	33
10	1	33	30
10	2	22	20
10	3	42	39
10	4	18	19
10	5	34	33
10	6	15	13
10	7	17	16
12	1	22	21
	H= 7		
1	0	99	89
1	1	27	26
1	2	189	192
1	3	64	64
1	4	8	18
1	5	59	61
1	6	69	71
1	7	14	16
1	8	28	19
1	9	22	23
1	10	77	73
3	0	45	58
3	1	71	73
3	2	92	99
3	3	6	8
3	4	58	58
3	5	17	19

Table G. (continued)

K	L	FO	FC
3	6	60	61
3	7	18	19
3	8	9	10
3	9	33	32
3	10	42	39
3	11	19	17
5	0	54	53
5	1	85	85
5	2	33	35
5	3	81	79
5	5	34	35
5	6	52	54
5	7	46	46
5	8	8	6
5	9	31	31
5	10	33	32
5	11	20	19
7	1	40	39
7	2	24	23
7	3	53	51
7	4	8	5
7	5	61	60
7	7	46	47
7	8	22	21
7	9	25	26
9	1	26	24
9	3	36	35
9	4	8	9
9	5	37	35
9	7	20	19
11	1	27	28
11	2	24	23
11	3	42	38
	H= 8		
0	0	17	20
0	2	180	177
0	4	167	163
0	6	62	66
0	8	32	31
0	10	64	61
0	12	10	8
2	0	60	56
2	1	28	29
2	2	70	73
2	4	20	18
2	5	30	29
2	6	25	25
2	8	28	29
2	9	24	26
2	10	54	50
2	11	17	16
2	12	10	6
4	0	83	82
4	1	58	60

K	L	FO	FC
4	2	40	43
4	3	82	85
4	5	6	8
4	6	38	41
4	7	44	45
4	8	18	18
4	9	21	19
4	10	36	36
4	11	18	15
6	0	24	24
6	1	22	22
6	2	53	51
6	3	77	77
6	4	20	18
6	5	38	38
6	6	10	13
6	7	58	59
6	8	22	21
6	9	19	20
6	10	21	19
8	0	16	16
8	1	24	23
8	3	47	48
8	5	27	27
8	7	31	31
8	9	15	14
10	1	14	12
10	3	36	32
10	5	14	13
10	6	12	11
	H= 9		
1	0	50	46
1	1	53	50
1	2	126	124
1	3	8	8
1	4	112	111
1	5	33	35
1	6	56	58
1	7	18	18
1	8	46	47
1	10	48	46
1	12	9	9
3	0	82	86
3	1	13	12
3	2	67	75
3	3	57	62
3	4	29	31
3	5	14	15
3	6	21	24
3	7	12	11
3	8	29	31
3	9	13	11
3	10	31	30
3	11	24	22

K	L	FC	FC
5	0	43	42
5	1	22	22
5	2	28	29
5	3	82	83
5	4	43	42
5	5	12	12
5	6	35	37
5	7	62	62
5	8	23	22
5	9	8	9
5	10	27	26
5	11	13	12
7	0	16	15
7	2	22	21
7	3	42	44
7	4	18	19
7	6	9	10
7	7	52	52
7	8	11	14
9	0	24	25
9	1	15	15
9	3	30	28
9	6	9	9
9	7	26	25
11	0	11	10
11	2	15	13
11	3	39	38
	H= 10		
0	0	127	125
0	2	109	107
0	4	152	152
0	6	56	57
0	8	55	55
0	10	34	32
0	12	18	18
2	0	111	109
2	1	10	11
2	2	58	59
2	3	22	22
2	4	75	77
2	5	32	32
2	6	56	57
2	7	28	27
2	8	48	48
2	9	10	9
2	10	27	24
2	11	18	18
4	0	33	35
4	1	37	39
4	3	59	61
4	4	60	60
4	5	10	10
4	6	36	37
4	7	27	29

K	L	FO	FC
4	8	37	37
4	10	22	23
4	11	15	15
6	0	41	41
6	1	14	15
6	2	23	22
6	3	55	56
6	4	30	32
6	5	12	12
6	6	18	20
6	7	61	60
6	8	15	16
6	9	9	7
8	1	9	8
8	3	40	40
8	7	29	29
10	0	16	15
10	2	12	9
10	3	30	28
10	5	12	9
	H= 11		
1	0	102	98
1	1	10	12
1	2	31	30
1	4	106	106
1	5	21	22
1	6	43	43
1	7	29	29
1	8	41	42
1	10	15	14
1	11	10	9
3	0	82	79
3	1	9	8
3	2	6	5
3	3	48	50
3	4	59	62
3	5	12	13
3	6	50	52
3	7	24	26
3	8	34	36
3	10	17	15
3	11	21	18
5	0	42	43
5	3	66	69
5	4	23	24
5	5	27	29
5	6	14	13
5	7	42	41
5	8	29	29
5	9	9	11
7	0	45	44
7	1	31	31
7	2	7	13
7	3	43	44

K	L	FO	FC
7	4	15	13
7	5	17	17
7	6	10	8
7	7	45	46
9	0	15	17
9	2	10	9
9	3	24	23
9	5	16	16
11	0	19	17
	H= 12		
0	0	90	90
0	2	36	37
0	4	112	114
0	6	13	15
0	8	49	47
0	10	8	8
2	0	84	84
2	1	31	30
2	2	9	9
2	3	12	12
2	4	64	66
2	6	47	49
2	7	24	24
2	8	16	19
2	11	15	14
4	0	74	78
4	1	21	22
4	2	20	21
4	3	53	57
4	4	34	35
4	5	30	31
4	6	19	18
4	7	24	25
4	8	26	25
4	9	10	11
6	0	33	34
6	1	22	22
6	3	23	25
6	4	32	33
6	5	33	34
6	7	42	42
6	8	11	11
6	9	22	20
8	0	10	10
8	1	39	37
8	3	27	28
8	5	22	23
8	7	29	32
10	0	13	11
10	1	13	13
10	2	15	14
10	3	16	16

K	L	FO	FC
	H= 13		
1	0	70	68
1	1	35	34
1	3	8	7
1	4	83	85
1	6	9	10
1	8	32	33
3	0	73	72
3	1	29	30
3	2	26	27
3	3	24	24
3	4	50	54
3	5	24	25
3	7	20	22
3	8	14	13
5	0	31	34
5	1	32	34
5	2	12	16
5	3	27	27
5	4	31	32
5	5	34	36
5	7	24	21
5	8	19	18
5	9	22	21
7	0	12	14
7	1	59	59
7	3	18	20
7	4	10	12
7	5	22	22
7	7	25	25
9	1	36	36
9	3	20	21
9	5	15	14
	H= 14		
0	0	27	28
0	2	29	28
0	4	70	73
0	6	35	37
0	8	29	29
0	10	15	14
2	0	50	49
2	1	21	23
2	2	38	39
2	3	11	10
2	4	57	58
2	5	11	10
2	6	12	10
2	8	26	28
2	9	8	8
4	0	47	48
4	1	60	63
4	2	9	9
4	3	32	35

K	L	FC	FC
4	4	20	20
4	5	35	36
4	6	11	12
4	7	15	15
4	8	18	17
6	1	64	70
6	2	13	14
6	3	11	13
6	4	20	21
6	5	28	29
6	6	9	11
6	7	14	13
6	8	10	12
8	1	51	52
8	3	18	18
8	5	22	22
	H= 15		
1	0	47	48
1	1	25	24
1	2	48	48
1	4	50	51
1	6	32	32
1	8	28	29
1	9	13	12
3	0	50	50
3	1	32	33
3	2	29	31
3	3	19	19
3	4	27	26
3	5	26	25
3	6	16	15
3	8	25	27
5	1	69	74
5	2	23	24
5	3	20	23
5	4	11	12
5	5	33	35
5	6	9	10
5	8	12	12
7	0	21	20
7	1	51	53
7	2	13	17
7	4	11	13
7	5	27	28
9	0	18	16
9	1	34	34
	H= 16		
0	0	48	49
0	2	53	52
0	4	50	52
0	6	38	39
0	8	14	12

K	L	FO	FC
2	0	47	48
2	2	44	44
2	4	27	26
2	5	8	8
2	6	26	27
2	8	29	31
4	0	10	11
4	1	46	47
4	2	46	47
4	3	12	14
4	4	10	9
4	5	32	32
4	6	11	13
4	8	15	15
6	0	16	16
6	1	45	47
6	2	16	16
6	3	11	13
6	4	9	7
6	5	18	19
6	6	11	11
8	1	31	33
	H= 17		
1	0	22	23
1	2	37	37
1	3	13	13
1	4	27	28
1	6	32	33
1	8	11	11
3	0	18	20
3	1	24	23
3	2	44	46
3	4	11	9
3	5	20	18
3	6	21	22
5	0	11	11
5	1	33	34
5	2	19	20
5	5	15	17
5	6	15	14
7	0	10	14
7	1	26	28
7	2	10	9
7	3	9	11
	H= 18		
0	0	11	10
0	2	25	22
0	4	13	13
0	6	31	32
2	0	10	10
2	2	28	30
2	3	8	7

Table G. (concluded)

K	L	FO	FC
2	6	26	26
4	1	22	22
4	2	29	33
4	3	8	10
4	4	8	7
4	5	16	17
4	6	12	12
6	1	15	16
6	3	23	22
	H=	19	
1	2	25	24
1	3	9	8
1	6	26	27
3	0	9	8
3	2	31	31
3	3	9	11
3	5	12	11
3	6	14	14
5	1	11	11
5	3	25	28
	H=	20	
0	2	24	24
0	4	16	16
2	2	28	29
2	4	11	11
4	1	10	7
4	2	13	11
4	3	19	22
4	4	16	15
	H=	21	
1	0	10	10
1	2	20	20
1	4	13	13
3	2	14	16
3	3	13	13

Table H. Observed (FO) and Calculated (FC) Structure Facors for $Cu_2(Dapsa)(OAc) \cdot CH_3OH$.

K	L	FO	FC
H=	0		
0	4	50	37
0	6	14	7
0	8	175	194
0	10	51	53
0	12	11	8
0	14	53	52
0	16	82	84
0	18	77	73
0	20	45	38
0	22	14	10
2	0	10	5
2	3	49	42
2	4	164	170
2	5	26	21
2	6	105	125
2	7	78	90
2	8	72	80
2	9	198	212
2	11	55	124
2	12	151	164
2	14	140	149
2	17	90	89
2	19	49	53
2	20	35	31
2	22	25	24
4	0	63	59
4	1	84	92
4	2	10	4
4	3	259	269
4	4	325	329
4	5	460	487
4	6	169	182
4	7	95	98
4	8	51	56
4	9	49	50
4	11	11	13
4	12	56	61
4	14	29	30
4	15	57	60
4	16	22	22
4	19	25	24
4	21	56	54
4	23	57	56
6	0	206	189
6	1	30	22
6	2	104	102
6	3	113	117
6	4	160	161
6	5	49	45
6	6	153	162
6	7	75	79
6	8	73	79
6	9	76	83
6	10	153	163

K	L	FO	FC
6	11	128	134
6	12	100	109
6	13	15	21
6	14	102	111
6	15	46	45
6	16	36	37
6	17	90	90
6	19	12	11
6	20	25	26
6	21	31	33
6	22	19	19
8	0	250	245
8	1	52	54
8	2	196	191
8	3	49	51
8	4	77	78
8	5	9	4
8	6	15	17
8	7	38	37
8	8	92	100
8	9	136	149
8	10	80	85
8	11	67	70
8	12	37	40
8	14	19	26
8	15	16	8
8	16	22	16
8	20	31	25
8	21	15	14
10	0	27	28
10	1	69	63
10	2	54	53
10	3	67	64
10	4	61	60
10	5	109	107
10	6	108	109
10	7	101	106
10	8	72	78
10	9	105	109
10	10	22	21
10	11	50	51
10	12	81	84
10	13	19	19
10	14	16	20
10	16	17	23
10	17	29	27
10	19	29	30
10	20	24	20
10	21	23	22
10	23	17	19
12	0	37	37
12	1	58	57
12	2	39	37
12	3	83	80
12	4	41	41
12	5	80	78

K	L	FC	FC
12	6	88	92
12	7	56	58
12	8	40	38
12	9	34	34
12	10	41	40
12	12	17	8
12	13	48	55
12	14	67	67
12	16	21	20
12	18	27	28
12	19	28	30
12	21	43	41
14	0	138	132
14	1	47	43
14	2	82	82
14	3	60	59
14	4	65	66
14	5	22	19
14	7	37	41
14	8	53	57
14	9	48	51
14	10	15	18
14	11	21	16
14	14	23	26
14	15	43	44
14	16	25	22
14	17	22	22
16	0	56	55
16	1	27	28
16	2	36	40
16	3	36	36
16	4	26	27
16	6	28	29
16	7	31	28
16	8	28	29
16	9	64	65
16	11	51	53
16	15	35	35
16	16	15	17
16	17	40	40
18	0	68	69
18	1	34	34
18	2	14	11
18	3	88	89
18	4	26	26
18	5	58	59
18	6	24	21
18	7	25	22
18	8	18	17
18	9	21	20
18	12	19	21
H=	1		
0	0	9	0
0	2	154	157

K	L	FO	FC
0	4	19	19
0	8	159	169
0	10	125	132
0	12	106	105
0	14	24	25
0	16	107	112
0	18	76	74
0	20	26	25
1	1	288	284
1	2	191	206
1	3	102	110
1	4	18	14
1	6	27	28
1	8	168	174
1	9	10	10
1	10	94	97
1	11	34	32
1	12	35	37
1	13	60	61
1	14	52	54
1	15	24	29
1	16	85	87
1	17	35	40
1	18	28	30
1	19	33	39
1	20	12	8
1	23	14	13
2	1	203	190
2	2	203	197
2	3	222	224
2	4	148	139
2	5	104	104
2	7	46	52
2	8	23	23
2	9	59	60
2	10	32	37
2	11	30	31
2	12	20	22
2	14	33	33
2	15	18	20
2	16	55	56
2	17	19	21
2	19	42	40
2	20	35	31
2	22	36	34
3	1	22	15
3	2	63	62
3	3	142	143
3	4	533	524
3	5	163	163
3	6	177	176
3	7	123	128
3	8	21	27
3	9	34	35
3	11	80	80
3	13	70	72

K	L	FO	FC
3	15	49	48
3	18	27	26
3	19	14	12
3	20	49	49
3	21	30	30
3	22	33	29
4	1	35	37
4	2	29	26
4	3	138	130
4	4	42	39
4	5	216	220
4	6	74	72
4	7	185	190
4	9	9	10
4	11	95	105
4	12	14	21
4	13	128	137
4	15	67	70
4	17	16	15
4	19	34	33
4	21	36	36
4	23	16	15
5	1	102	90
5	2	66	59
5	3	8	12
5	4	92	90
5	5	147	151
5	6	117	113
5	7	71	74
5	8	87	93
5	10	73	79
5	11	70	71
5	12	38	37
5	13	102	108
5	15	56	58
5	16	22	23
5	17	14	16
5	18	42	43
5	19	24	21
6	1	126	114
6	2	72	73
6	3	41	42
6	4	91	90
6	6	122	121
6	7	94	97
6	8	92	91
6	9	21	20
6	10	19	21
6	11	57	58
6	12	15	15
6	13	25	28
6	14	18	22
6	17	35	36
6	18	13	15
6	19	32	30
6	21	16	16

K	L	FO	FC
6	22	23	22
7	1	142	138
7	2	83	82
7	3	93	93
7	4	37	37
7	5	69	65
7	6	28	28
7	7	88	88
7	8	20	21
7	9	148	149
7	10	15	16
7	11	43	45
7	12	19	23
7	13	17	16
7	15	28	27
7	16	20	20
7	17	30	32
7	19	49	51
7	20	17	18
7	23	17	11
7	25	24	19
8	1	81	76
8	2	19	18
8	3	8	15
8	5	10	8
8	6	45	47
8	7	37	37
8	8	149	154
8	10	131	135
8	11	20	20
8	12	50	51
8	14	39	39
8	16	45	46
8	17	20	23
8	18	38	39
8	20	25	25
9	1	34	33
9	3	94	87
9	5	44	41
9	6	79	82
9	7	51	49
9	8	118	118
9	9	37	30
9	10	140	149
9	11	45	46
9	13	36	38
9	14	49	51
9	15	17	18
9	16	28	28
9	20	19	20
10	1	120	113
10	2	27	27
10	3	74	71
10	4	93	93
10	5	34	34
10	6	35	38

K	L	FC	FC
10	7	18	16
10	8	11	11
10	10	34	34
10	11	45	48
10	12	12	11
10	13	70	72
10	14	17	22
10	16	17	14
10	17	24	25
10	20	19	18
10	22	26	25
11	2	76	73
11	4	137	134
11	5	23	20
11	6	86	87
11	11	15	19
11	12	19	21
11	14	21	21
11	16	20	17
11	19	13	15
11	20	24	20
11	22	29	24
12	1	30	28
12	2	61	59
12	3	64	64
12	4	96	97
12	5	58	59
12	6	48	49
12	7	51	52
12	8	13	14
12	9	12	9
12	10	33	33
12	11	16	12
12	12	15	18
12	13	30	28
12	14	28	29
12	15	35	35
12	16	21	19
12	20	17	12
12	22	23	19
13	3	61	61
13	5	64	63
13	6	13	12
13	7	24	22
13	8	48	49
13	11	20	18
13	13	68	68
13	15	55	56
13	16	18	20
14	1	46	47
14	2	14	12
14	4	26	26
14	5	45	44
14	6	40	40
14	7	19	18
14	8	78	82

K	L	FO	FC
14	10	47	50
14	11	13	14
14	12	24	23
14	13	28	30
14	15	14	8
14	16	26	29
14	18	30	33
15	1	93	93
15	2	17	17
15	3	48	37
15	4	18	23
15	6	14	11
15	7	64	65
15	8	19	24
15	9	39	41
15	17	19	25
15	18	17	15
15	19	14	12
16	1	86	85
16	3	32	31
16	4	25	21
16	5	20	28
16	6	23	21
16	7	14	12
16	9	17	14
16	10	17	16
16	12	13	16
16	13	18	18
16	17	16	15
17	1	21	19
17	5	26	27
17	6	17	14
17	8	35	38
17	10	36	38
17	11	16	15
17	13	16	16
17	16	19	17
18	2	17	17
18	3	26	26
18	5	29	29
18	7	18	18
18	8	29	31
18	10	25	23
18	11	17	16
18	13	32	33
19	2	48	49
19	4	45	46
19	5	22	19
19	6	19	19
19	11	16	17
20	1	16	12
20	2	31	28
20	4	40	38
20	6	27	27
21	1	23	23
21	4	21	20

Table H. (continued)

K	L	FO	FC
	H= 2		
0	0	159	122
0	4	46	44
0	6	65	65
0	8	14	17
0	10	34	34
0	12	26	23
0	14	10	11
1	0	212	190
1	1	98	90
1	2	11	14
1	3	10	11
1	4	99	93
1	5	108	111
1	6	52	59
1	7	142	152
1	8	76	80
1	9	144	153
1	10	44	43
1	11	86	92
1	12	58	61
1	13	25	26
1	14	41	42
1	15	27	29
1	16	31	28
1	17	67	70
1	18	61	60
1	19	64	64
1	20	48	47
1	21	44	42
1	23	25	27
1	24	21	13
1	26	23	18
2	0	18	16
2	1	21	19
2	2	31	32
2	3	100	101
2	4	28	25
2	5	51	42
2	6	10	5
2	7	14	11
2	8	40	39
2	9	26	25
2	10	76	73
2	11	81	81
2	12	69	74
2	13	12	16
2	14	18	19
2	15	11	10
2	16	16	17
2	18	12	13
2	21	12	9
3	0	23	23
3	1	33	39
3	2	40	35

K	L	FO	FC
3	3	163	161
3	4	194	185
3	5	151	145
3	6	67	69
3	7	50	50
3	9	64	60
3	10	61	63
3	12	149	155
3	13	34	39
3	14	140	141
3	15	57	60
3	16	72	70
3	17	46	49
3	21	37	32
3	22	24	21
3	23	20	17
4	0	8	10
4	1	9	12
4	2	29	25
4	3	72	62
4	4	8	2
4	5	55	53
4	6	31	27
4	7	77	76
4	8	62	62
4	12	16	18
4	13	14	14
4	16	11	5
4	17	14	18
4	20	12	11
5	0	147	143
5	1	75	81
5	2	46	49
5	3	205	207
5	4	89	88
5	5	218	215
5	7	11	5
5	8	50	49
5	9	63	66
5	10	37	39
5	11	12	15
5	12	90	94
5	14	68	67
5	15	46	46
5	16	54	52
5	17	19	16
5	18	27	29
5	19	23	23
5	21	44	42
5	23	41	37
5	24	16	14
5	25	21	16
6	0	16	13
6	1	18	15
6	3	32	26
6	4	56	58

K	L	FO	FC
6	5	106	99
6	6	115	105
6	7	58	57
6	8	145	148
6	9	48	53
6	10	16	19
6	11	50	48
6	12	18	19
6	13	12	10
6	14	15	14
6	21	15	17
6	22	14	16
7	0	100	96
7	1	36	38
7	2	44	45
7	3	65	62
7	4	16	18
7	5	61	56
7	6	45	48
7	7	171	175
7	8	97	95
7	9	232	242
7	11	143	147
7	12	35	37
7	13	17	21
7	14	24	23
7	15	65	64
7	16	23	30
7	17	86	89
7	18	25	31
7	19	40	44
7	20	20	21
7	21	14	18
7	24	16	17
8	0	21	22
8	2	15	18
8	3	12	13
8	4	51	47
8	5	10	12
8	6	20	17
8	7	22	24
8	8	16	16
8	10	14	12
8	12	22	31
8	13	24	30
8	14	21	29
9	0	215	203
9	1	32	29
9	2	112	109
9	3	65	62
9	4	12	18
9	5	71	71
9	6	126	129
9	7	42	43
9	8	116	118
9	9	27	28

K	L	FO	FC
9	10	29	32
9	12	13	16
9	15	18	20
9	16	35	36
9	18	53	54
9	19	16	16
9	20	45	44
9	21	28	23
9	23	23	24
9	24	24	19
10	0	45	43
10	1	62	58
10	2	36	37
10	3	31	30
10	5	33	34
10	7	15	11
10	9	16	18
10	11	19	18
11	0	28	29
11	1	31	28
11	2	18	21
11	3	13	13
11	4	94	94
11	5	11	7
11	6	123	123
11	7	25	27
11	8	55	54
11	9	43	43
11	10	68	70
11	12	145	151
11	14	120	125
11	16	59	59
11	17	22	22
11	20	21	20
11	22	19	16
12	0	18	16
12	2	29	31
12	3	24	24
12	6	14	16
12	8	20	24
12	11	24	24
12	12	12	12
13	0	107	103
13	1	55	52
13	2	75	74
13	3	129	126
13	5	110	108
13	6	38	36
13	7	29	28
13	8	28	23
13	11	13	9
13	15	21	22
13	16	15	15
13	18	18	21
13	19	20	19
13	20	17	15

K	L	FO	FC
14	3	23	23
14	6	24	29
14	7	15	14
14	10	30	31
14	12	12	12
15	0	38	37
15	1	26	24
15	2	33	33
15	3	43	42
15	4	25	25
15	5	14	15
15	7	55	54
15	9	74	75
15	11	67	66
15	13	13	12
15	15	25	26
15	17	41	40
16	3	13	16
16	6	28	26
16	8	22	24
16	11	19	17
17	0	80	78
17	1	26	23
17	2	63	63
17	3	44	40
17	4	25	25
17	5	25	24
17	8	29	28
17	9	23	22
17	10	32	34
17	11	15	15
17	12	15	19
17	14	19	18
17	15	23	18
18	1	13	17
19	1	15	11
19	3	16	15
19	4	16	14
19	5	20	16
19	6	29	29
19	7	18	14
19	10	19	22
21	0	21	19
21	3	22	19
	H= 3		
0	2	18	11
0	4	21	20
0	6	40	37
0	8	133	133
0	10	151	145
0	12	31	31
0	14	59	59
0	16	56	59
0	18	61	61

K	L	FO	FC
0	20	43	41
0	22	21	21
0	24	14	15
1	1	197	173
1	2	127	119
1	5	58	52
1	6	41	41
1	7	53	52
1	8	64	64
1	9	79	77
1	10	107	112
1	11	9	15
1	12	65	69
1	13	64	65
1	14	18	18
1	15	75	75
1	16	35	31
1	17	42	38
1	18	31	28
1	19	17	15
1	25	14	7
2	1	160	162
2	2	66	54
2	3	16	32
2	4	127	123
2	5	38	38
2	6	107	103
2	7	40	40
2	8	63	62
2	9	59	57
2	10	17	17
2	11	14	17
2	13	52	52
2	14	26	26
2	15	71	72
2	16	18	18
2	17	39	40
2	19	36	35
2	20	31	27
2	21	13	12
2	22	32	31
2	24	23	18
3	1	10	10
3	2	187	185
3	4	153	155
3	5	52	55
3	6	87	93
3	7	37	40
3	8	113	119
3	9	36	35
3	10	53	52
3	12	14	18
3	13	58	58
3	15	46	46
3	16	17	16
3	18	33	36

K	L	FO	FC
3	19	36	34
3	20	43	44
3	22	33	36
3	24	17	20
4	1	16	9
4	3	85	84
4	4	44	41
4	5	153	150
4	6	68	64
4	7	111	111
4	8	84	83
4	9	71	65
4	10	30	28
4	11	110	109
4	12	16	15
4	13	106	109
4	15	91	93
4	17	20	18
4	18	25	24
4	21	19	15
4	23	14	18
5	1	93	97
5	2	34	29
5	3	11	11
5	4	29	31
5	5	150	145
5	6	42	42
5	7	154	151
5	8	17	13
5	9	59	64
5	11	86	84
5	12	42	43
5	13	92	89
5	15	51	50
5	16	29	27
5	18	39	36
5	19	16	16
5	20	21	16
5	22	15	14
6	1	89	81
6	2	99	99
6	3	10	8
6	4	117	113
6	5	93	87
6	6	48	51
6	7	59	55
6	8	75	73
6	9	59	59
6	10	71	71
6	12	18	13
6	13	24	25
6	14	31	30
6	15	20	18
6	17	29	30
6	18	18	20
6	19	36	38

K	L	FO	FC
6	20	35	33
6	22	20	28
6	23	15	8
7	1	193	194
7	2	29	29
7	3	68	69
7	4	74	76
7	6	60	58
7	7	95	98
7	9	129	128
7	10	55	53
7	14	32	32
7	15	19	21
7	16	22	28
7	17	31	38
7	19	36	32
7	21	28	26
7	22	24	24
7	24	18	18
8	1	128	123
8	2	53	51
8	3	32	28
8	4	27	28
8	5	33	35
8	6	31	35
8	7	37	35
8	8	104	107
8	9	37	36
8	10	125	124
8	12	70	67
8	15	12	13
8	16	64	66
8	18	49	49
8	19	19	19
8	20	21	21
9	1	48	46
9	2	117	113
9	4	67	69
9	5	43	46
9	7	30	31
9	8	96	99
9	10	102	104
9	11	62	63
9	12	47	49
9	13	57	61
9	14	48	43
9	15	16	15
9	16	54	54
9	18	35	37
10	1	66	64
10	2	87	86
10	3	25	23
10	4	81	88
10	6	18	18
10	7	24	25
10	8	35	36

Table H. (continued)

K	L	FO	FC
10	9	29	27
10	10	47	49
10	11	38	38
10	12	15	13
10	13	61	64
10	15	62	67
10	16	25	25
10	17	28	28
10	19	13	11
10	20	24	22
10	22	23	25
11	1	56	56
11	2	76	74
11	4	125	122
11	5	23	25
11	6	66	65
11	7	26	27
11	10	41	47
11	11	20	24
11	12	16	18
11	14	16	12
11	16	26	30
11	20	23	20
11	22	27	26
12	1	20	22
12	2	49	50
12	3	22	22
12	4	82	82
12	5	61	64
12	6	39	42
12	7	48	48
12	11	32	32
12	12	14	13
12	13	53	53
12	15	35	36
12	16	17	18
12	17	15	13
12	20	15	16
13	2	38	36
13	4	46	46
13	5	42	41
13	7	43	43
13	8	50	50
13	9	30	32
13	10	43	41
13	11	41	42
13	13	50	53
13	15	43	46
13	16	17	12
13	19	17	15
14	1	33	34
14	3	15	14
14	4	13	14
14	5	45	47
14	6	61	61
14	7	38	34

K	L	FO	FC
14	8	46	47
14	10	41	42
14	11	22	24
14	12	17	15
14	13	16	20
14	16	16	18
14	18	29	27
15	1	79	80
15	2	15	11
15	3	21	19
15	5	38	39
15	6	12	18
15	7	38	40
15	8	13	14
15	9	37	38
15	17	21	19
16	1	59	59
16	3	29	26
16	4	13	5
16	5	15	18
16	7	25	25
16	8	22	22
16	9	18	17
16	10	28	28
16	12	20	17
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17	3	18	19
17	5	18	21
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17	9	16	18
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17	12	16	18
17	13	24	24
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18	11	30	31
18	13	27	27
19	2	20	21
19	4	34	33
19	6	17	17
20	2	19	21
20	4	28	29
20	6	18	22
	H=	4	
0	0	309	308
0	2	282	276
0	4	64	64
0	6	122	126
0	8	133	135
0	10	51	49
0	12	15	16
0	14	63	67
0	16	72	73
0	18	54	55

K	L	FO	FC
0	20	36	36
0	24	35	33
1	0	36	32
1	1	105	94
1	2	40	34
1	3	88	73
1	4	85	80
1	5	12	7
1	6	70	72
1	7	19	22
1	9	36	36
1	10	19	16
1	11	34	35
1	12	21	19
1	13	18	19
1	14	17	21
1	15	16	18
1	23	16	13
2	0	12	17
2	1	59	55
2	2	8	12
2	3	25	17
2	4	37	37
2	5	64	76
2	6	112	114
2	7	108	110
2	8	71	71
2	9	156	155
2	10	49	49
2	11	87	89
2	12	129	129
2	13	22	25
2	14	101	97
2	15	31	33
2	16	37	36
2	17	61	57
2	19	29	24
2	20	17	16
3	0	175	157
3	1	20	17
3	2	101	92
3	3	14	18
3	4	26	22
3	5	37	33
3	6	63	55
3	7	42	38
3	8	25	23
3	9	18	19
3	10	27	26
3	11	26	27
3	12	17	17
3	14	11	13
3	16	23	23
4	0	19	17
4	1	82	79
4	3	266	257

K	L	FO	FC
4	4	39	39
4	5	269	260
4	6	58	57
4	7	70	72
4	8	26	29
4	10	41	38
4	12	43	43
4	13	12	12
4	14	32	32
4	15	31	28
4	16	13	13
4	19	46	46
4	21	53	49
4	23	41	34
5	0	65	58
5	1	16	12
5	2	39	34
5	3	70	67
5	4	41	37
5	5	9	2
5	6	97	95
5	7	36	33
5	8	25	21
5	9	39	40
5	10	26	26
5	11	45	47
5	13	16	18
5	14	35	35
5	18	15	15
5	19	22	22
5	20	18	16
6	0	39	41
6	1	19	19
6	2	74	76
6	3	96	96
6	4	120	119
6	5	52	51
6	6	63	63
6	7	85	86
6	8	16	15
6	9	105	112
6	10	65	63
6	11	81	80
6	12	108	112
6	14	89	89
6	15	53	54
6	16	47	49
6	17	65	64
6	18	20	28
6	19	29	30
6	21	15	16
6	23	15	12
7	0	27	26
7	2	42	42
7	3	41	40
7	4	15	16

K	L	FQ	FC
7	5	55	52
7	6	17	18
7	9	29	30
7	10	16	13
7	11	28	26
7	12	13	16
7	13	29	28
7	14	25	31
7	15	26	31
7	16	13	11
7	17	18	19
7	18	16	17
8	0	241	237
8	1	30	25
8	2	133	135
8	3	67	64
8	5	10	11
8	6	53	52
8	7	49	49
8	8	79	78
8	9	84	83
8	10	45	46
8	11	56	55
8	13	12	17
8	15	30	26
8	16	32	31
8	17	23	19
8	18	51	48
8	19	19	17
8	20	28	29
9	0	19	19
9	5	20	23
9	6	25	27
9	7	20	18
9	11	29	32
9	14	24	26
9	19	24	26
10	0	133	131
10	1	21	22
10	2	54	56
10	3	68	69
10	4	49	48
10	5	97	97
10	6	87	85
10	7	82	83
10	8	50	49
10	9	71	71
10	10	20	19
10	11	38	38
10	12	58	57
10	13	15	17
10	14	56	54
10	17	19	21
10	18	31	34
10	19	33	33
10	20	21	20

K	L	FO	FC
10	21	23	21
11	0	23	22
11	1	26	22
11	2	27	29
11	5	24	23
11	9	17	20
11	10	20	24
11	12	20	22
11	13	18	17
11	15	13	5
11	17	25	24
12	0	37	38
12	1	14	15
12	3	80	81
12	4	57	58
12	5	100	99
12	6	75	74
12	7	51	52
12	8	35	35
12	9	11	10
12	10	17	14
12	12	55	54
12	14	56	56
12	16	21	22
12	20	17	14
13	0	32	30
13	1	24	28
13	2	13	11
13	3	12	13
13	5	13	12
13	6	16	18
13	8	24	24
13	9	14	18
13	10	13	17
14	0	62	61
14	1	23	23
14	2	63	61
14	3	57	57
14	4	24	22
14	5	44	44
14	6	19	23
14	7	20	22
14	8	31	32
14	9	52	54
14	10	27	26
14	11	23	26
14	12	23	20
14	14	28	25
14	15	26	24
14	16	19	20
14	17	18	18
14	18	16	17
15	0	38	39
15	2	22	23
15	6	18	15
15	9	14	13

K	L	FO	FC
15	12	14	17
16	0	41	41
16	1	16	19
16	2	26	25
16	7	30	28
16	8	16	15
16	9	62	64
16	10	19	17
16	11	46	45
16	15	24	25
17	0	17	19
17	3	13	13
17	6	22	22
17	13	14	6
18	0	22	19
18	1	20	24
18	2	14	12
18	3	51	50
18	5	47	45
18	6	27	26
18	7	24	27
19	1	17	16
20	4	18	17
	H=	5	
0	2	35	36
0	4	85	79
0	6	81	79
0	8	124	124
0	10	160	169
0	12	43	42
0	14	66	67
0	16	28	26
0	18	35	38
0	22	17	15
0	24	25	21
1	1	218	202
1	2	17	17
1	3	93	90
1	4	72	66
1	5	65	64
1	7	16	14
1	8	110	110
1	9	47	44
1	10	100	101
1	11	44	44
1	12	16	21
1	13	27	28
1	14	19	16
1	15	17	15
1	16	34	32
1	18	25	25
1	19	16	14
2	1	103	103
2	2	174	170

K	L	FO	FC
2	3	74	71
2	4	128	125
2	5	59	60
2	6	33	36
2	7	89	89
2	8	44	43
2	9	60	61
2	10	71	72
2	11	24	23
2	12	31	30
2	14	24	26
2	15	15	19
2	16	41	41
2	17	20	21
2	19	26	23
2	20	15	14
2	22	32	28
2	24	20	16
3	1	82	76
3	2	65	66
3	3	39	40
3	4	100	103
3	5	53	58
3	6	120	119
3	7	53	54
3	8	59	60
3	9	14	14
3	10	30	28
3	11	53	52
3	12	21	28
3	13	71	72
3	14	27	30
3	15	39	41
3	16	18	19
3	17	14	13
3	18	25	27
3	19	18	14
3	20	25	23
3	22	24	26
4	1	12	18
4	2	39	40
4	3	73	69
4	4	18	18
4	5	107	108
4	6	31	31
4	7	46	47
4	8	39	37
4	9	16	17
4	10	32	32
4	11	76	76
4	13	108	106
4	14	23	22
4	15	71	71
4	16	37	37
4	19	40	39
4	21	19	15

Table H. (continued)

K	L	FO	FC
5	1	17	14
5	2	70	73
5	3	50	53
5	4	96	99
5	5	77	74
5	6	77	78
5	7	19	23
5	8	51	48
5	10	27	29
5	11	46	44
5	13	71	68
5	15	44	44
5	16	13	13
5	18	19	12
5	19	14	15
5	20	18	18
5	21	15	13
5	22	16	19
6	1	115	115
6	2	33	32
6	3	69	66
6	4	55	57
6	5	19	22
6	6	39	39
6	7	93	96
6	8	28	30
6	9	13	10
6	10	12	10
6	11	35	34
6	13	43	44
6	15	18	22
6	16	22	24
6	17	22	23
6	18	17	15
6	19	30	28
6	21	29	29
7	1	177	176
7	2	59	59
7	3	80	79
7	4	29	27
7	5	22	22
7	7	26	20
7	8	26	25
7	9	46	42
7	10	21	20
7	11	24	27
7	12	16	12
7	13	15	18
7	15	39	40
7	16	22	20
7	17	24	21
7	18	15	13
7	19	24	23
8	1	81	80
8	2	42	42
8	3	42	38

K	L	FO	FC
8	4	32	26
8	5	44	42
8	6	57	54
8	7	16	15
8	8	91	88
8	10	60	59
8	12	21	20
8	13	15	16
8	14	26	27
8	16	41	41
8	17	17	13
8	18	17	20
8	19	26	24
8	20	15	17
9	1	75	76
9	2	24	21
9	3	74	76
9	5	35	35
9	6	61	60
9	8	73	73
9	9	12	9
9	10	61	61
9	11	20	20
9	12	25	25
9	13	23	20
9	15	18	19
9	16	35	34
9	18	20	19
10	1	66	66
10	2	95	94
10	3	68	68
10	4	64	64
10	5	32	30
10	6	38	38
10	10	12	14
10	11	34	36
10	12	13	10
10	13	35	33
10	14	16	13
10	16	35	36
11	2	83	77
11	3	31	35
11	4	75	75
11	5	19	22
11	6	56	57
11	8	34	35
11	10	21	22
11	20	24	23
12	1	13	14
12	2	31	31
12	3	20	16
12	4	69	67
12	5	13	10
12	6	16	13
12	7	25	26
12	10	21	22

K	L	FO	FC
12	11	41	40
12	13	37	34
12	14	18	20
12	15	16	13
13	1	54	53
13	2	13	14
13	3	29	31
13	5	51	54
13	6	26	24
13	7	29	29
13	8	29	26
13	10	27	27
13	11	42	42
13	13	34	34
13	14	15	14
13	15	21	21
13	16	17	16
14	1	37	36
14	2	25	23
14	4	34	32
14	5	28	30
14	6	48	48
14	7	41	42
14	8	46	47
14	9	19	21
14	10	30	29
14	11	20	20
14	12	18	20
14	13	28	27
14	16	19	16
15	1	58	58
15	3	38	40
15	7	32	33
15	9	22	22
15	10	15	18
16	1	41	40
16	2	15	11
16	5	26	26
16	6	25	25
16	7	32	32
16	9	21	20
16	13	14	11
17	4	15	10
17	5	18	20
17	6	26	26
17	7	20	22
17	8	31	32
17	10	32	30
18	2	16	15
18	3	22	23
18	4	27	25
18	5	19	18
18	7	21	20
18	8	25	28
19	1	16	16
19	2	22	22

K	L	FO	FC
19	4	33	33
	H= 6		
0	0	53	49
0	2	12	11
0	4	36	35
0	6	33	30
0	8	32	29
0	10	37	36
0	12	32	33
0	14	20	20
0	20	14	9
1	0	130	136
1	2	140	143
1	3	38	37
1	4	20	13
1	5	72	71
1	6	132	132
1	7	131	133
1	8	114	114
1	9	147	143
1	11	75	71
1	12	88	91
1	13	15	12
1	14	16	16
1	15	28	30
1	17	27	26
1	18	27	25
1	19	31	29
1	20	38	37
1	21	20	21
2	0	20	23
2	1	22	23
2	2	15	17
2	3	61	59
2	5	68	64
2	6	24	21
2	7	21	18
2	8	42	43
2	9	20	20
2	10	34	34
2	13	22	20
3	0	30	34
3	1	42	44
3	2	83	86
3	3	115	118
3	4	76	79
3	5	45	45
3	6	119	117
3	8	29	29
3	9	36	35
3	10	80	79
3	11	79	80
3	12	76	76
3	13	32	32

K	L	FO	FC
3	14	87	89
3	15	25	26
3	16	21	23
3	17	48	50
3	21	38	35
3	22	14	14
4	0	11	6
4	1	17	16
4	5	14	10
4	6	15	14
4	7	28	30
4	8	11	1
4	9	39	38
4	10	24	22
4	13	14	11
5	0	101	98
5	1	74	76
5	2	107	103
5	3	156	157
5	4	122	116
5	5	141	139
5	6	46	46
5	7	35	33
5	8	38	35
5	9	49	46
5	10	15	13
5	11	17	16
5	12	23	25
5	13	17	14
5	14	39	39
5	15	37	37
5	16	33	32
5	17	15	13
5	18	13	12
5	19	18	17
5	21	27	26
6	1	26	28
6	3	52	49
6	4	34	33
6	5	29	28
6	6	26	27
6	7	11	15
6	8	24	24
6	10	24	20
6	18	15	16
7	0	63	56
7	1	16	13
7	2	38	35
7	3	35	34
7	5	51	49
7	6	44	43
7	7	87	84
7	8	36	39
7	9	104	102
7	11	57	56
7	12	16	16

K	L	FC	FC
7	14	22	20
7	15	47	50
7	17	59	57
7	19	47	42
8	0	15	22
8	1	13	12
8	2	33	31
8	3	40	36
8	4	18	13
8	7	14	14
8	9	13	14
8	11	18	12
8	12	17	19
8	14	20	20
9	0	225	218
9	1	22	21
9	2	95	92
9	3	74	75
9	5	43	43
9	7	16	20
9	8	20	18
9	9	22	20
9	13	16	18
9	16	18	19
9	18	34	33
9	20	14	12
10	0	56	58
10	1	18	19
10	2	31	28
10	3	26	22
10	4	16	13
10	5	34	31
10	8	23	20
10	11	14	14
11	0	54	50
11	2	48	47
11	3	12	10
11	4	57	61
11	6	57	57
11	7	14	16
11	8	13	9
11	9	26	24
11	10	34	32
11	12	71	69
11	14	63	61
11	16	20	23
12	2	29	28
12	4	13	12
12	7	17	21
13	0	53	53
13	2	53	51
13	3	60	59
13	5	84	84
13	6	33	32
13	7	40	44
13	10	17	16

K	L	FC	FC
13	13	17	21
14	6	17	19
14	9	15	11
14	10	15	14
14	14	19	13
15	1	13	12
15	3	24	21
15	4	14	16
15	6	15	11
15	7	45	47
15	8	14	11
15	9	53	55
15	11	42	42
16	3	15	17
17	0	62	60
17	1	15	16
17	2	50	50
17	3	31	29
17	5	31	29
17	6	15	7
17	8	17	19
17	9	29	31
	H= 7		
0	6	93	95
0	8	128	129
0	10	134	136
0	14	29	28
0	18	25	28
0	20	18	19
1	1	54	57
1	2	51	53
1	3	32	33
1	4	57	59
1	7	25	27
1	8	61	63
1	9	13	11
1	10	96	98
1	11	17	15
1	12	43	42
1	14	24	24
1	16	37	35
1	17	30	28
1	18	24	23
1	19	17	14
2	1	69	65
2	2	52	50
2	3	33	33
2	4	76	76
2	6	55	57
2	7	12	12
2	8	20	22
2	9	63	61
2	10	24	26
2	11	40	42

K	L	FO	FC
2	12	20	18
2	13	22	23
2	15	54	51
2	16	24	21
2	17	23	23
2	19	25	23
2	20	31	27
3	1	49	46
3	2	51	49
3	4	90	88
3	5	89	88
3	6	100	96
3	7	102	102
3	8	28	25
3	9	19	17
3	11	30	29
3	12	14	14
3	13	27	28
3	14	13	11
3	15	21	19
3	17	14	11
3	18	16	14
3	19	24	22
3	20	20	28
4	1	40	38
4	2	54	55
4	3	69	68
4	4	66	69
4	5	89	83
4	6	34	35
4	8	26	22
4	9	23	26
4	11	52	53
4	13	77	74
4	14	27	23
4	15	56	55
4	18	13	11
5	1	58	55
5	2	38	38
5	3	14	11
5	4	18	18
5	5	89	90
5	6	22	19
5	7	82	79
5	8	20	24
5	9	29	28
5	10	20	19
5	11	28	27
5	13	38	41
5	15	27	27
5	18	16	15
5	19	23	20
6	1	65	66
6	2	19	18
6	3	30	32
6	4	77	75

Table H. (concluded)

K	L	FO	FC
6	5	20	20
6	6	60	60
6	7	65	66
6	9	25	24
6	10	47	46
6	12	28	31
6	16	19	19
6	17	19	20
6	18	32	31
6	20	25	23
7	1	99	102
7	2	61	59
7	3	63	64
7	4	52	50
7	5	23	20
7	6	15	7
7	7	17	19
7	10	20	22
7	12	20	24
7	16	26	22
7	17	19	21
7	19	24	18
8	1	87	84
8	3	21	17
8	4	35	37
8	6	35	33
8	7	16	18
8	8	43	45
8	10	43	45
8	12	16	16
8	16	27	29
8	18	27	26
9	2	34	36
9	4	16	19
9	5	23	23
9	8	41	41
9	10	55	54
9	11	14	14
9	12	20	23
9	13	29	30
9	14	16	18
9	15	24	22
9	16	40	36
9	18	22	21
10	1	73	73
10	2	62	61
10	4	41	41
10	5	21	18
10	7	15	11
10	10	14	10
10	11	30	34
10	13	33	32
10	15	28	26
10	17	21	23
11	2	53	57
11	3	20	19
11	4	57	55
11	6	31	31
11	16	16	17
12	1	16	18
12	4	44	43
12	6	27	26
12	7	22	19
12	8	16	15
12	11	34	38
12	13	35	35
12	15	23	24
13	1	14	12
13	2	31	30
13	3	21	16
13	4	35	37
13	5	32	27
13	7	30	28
13	8	22	22
13	10	24	25
13	11	30	30
13	13	28	28
14	1	28	27
14	4	36	37
14	5	30	31
14	6	39	41
14	7	19	18
14	8	24	23
14	10	22	21
15	1	51	50
15	3	27	25
15	7	27	30
16	1	22	24
16	6	24	26
17	1	22	18

H= 8

K	L	FO	FC
0	0	104	101
0	2	84	79
0	6	52	49
0	8	76	75
0	10	58	58
0	12	47	44
0	14	28	29
0	16	37	36
0	18	49	46
1	1	13	13
1	3	18	16
1	5	24	23
1	7	21	18
1	9	22	18
1	10	18	15
1	11	22	20
1	12	31	27
1	14	34	34
1	15	15	12
2	1	15	16
2	2	15	13
2	4	31	36
2	6	65	67
2	7	66	69
2	8	35	36
2	9	69	73
2	10	37	39
2	11	41	38
2	12	66	68
2	13	15	19
2	14	58	58
2	15	24	21
2	17	24	23
2	19	19	15
3	2	20	20
3	3	13	10
3	4	16	20
3	5	27	29
3	8	26	26
3	9	41	40
3	14	30	31
3	16	16	19
3	17	14	10
4	1	43	45
4	2	16	19
4	3	106	108
4	5	72	76
4	7	44	47
4	12	35	34
4	13	34	31
4	14	22	22
4	16	14	16
5	0	45	46
5	2	13	13
5	3	13	16
5	5	15	11
5	6	14	15
5	7	23	23
5	9	23	21
5	10	14	12
5	11	28	28
5	13	15	12
5	16	16	13
5	17	20	19
6	0	50	49
6	1	47	44
6	2	67	64
6	3	63	63
6	4	42	42
6	5	14	13
6	6	18	19
6	7	39	42
6	9	72	71
6	10	32	29
6	11	48	51
6	12	46	45
6	14	55	52
6	15	34	35
6	16	27	29
6	17	34	38
7	0	64	62
7	2	21	21
7	3	34	36
7	4	22	23
7	11	14	12
7	12	15	7
8	0	89	91
8	1	17	15
8	2	79	85
8	3	36	34
8	5	26	23
8	6	40	41
8	7	22	22
8	8	42	40
8	9	38	41
8	10	31	30
8	11	28	30
8	15	21	21
8	16	26	26
9	0	15	15
9	1	16	17
9	5	15	18
9	6	28	27
9	8	16	10
9	12	15	24
9	14	23	21
9	15	16	13
10	0	55	58
10	1	15	19
10	2	39	37
10	3	25	28
10	5	25	30
10	6	51	50
10	7	52	53
10	8	35	36
10	9	40	39
10	11	21	19
10	12	39	41
10	14	40	41
11	0	30	32
11	1	19	19
11	4	23	17
11	6	23	19
12	0	33	34
12	1	23	23
12	3	57	57
12	4	28	28
12	5	47	48
12	6	36	37
12	7	26	25
12	10	20	23
12	12	41	40
13	0	16	14
14	0	39	35
14	1	23	24
14	2	25	27
14	3	37	36
14	5	16	22
14	8	19	18
15	5	19	22

H= 9

K	L	FO	FC
0	2	43	44
0	4	16	14
0	6	29	27
0	8	52	51
0	10	45	43
0	14	29	26
0	16	38	35
1	1	46	51
1	3	17	23
1	6	19	21
1	8	35	38
1	9	13	12
1	10	25	28
1	11	31	34
1	12	15	18
1	13	34	35
1	15	30	27
1	16	23	20
2	1	49	47
2	2	31	35
2	3	26	23
2	4	38	40
2	6	32	35
2	7	33	35
2	9	16	19
2	10	30	30
2	13	14	2
3	2	34	32
3	3	17	17
3	4	53	52
3	5	38	37
3	6	45	45
3	7	25	30
3	8	38	39
3	9	14	10
3	10	31	35
3	11	21	19
3	13	29	26
4	1	14	12
4	2	18	18
4	4	22	26
4	5	33	36
4	7	29	28
4	8	20	23
4	9	22	20
4	10	26	26
4	11	61	59
4	13	48	49
4	15	33	32
5	3	23	25
5	4	39	32
5	5	38	37
5	6	58	58
5	7	17	17
5	8	15	17
5	10	17	18
5	11	36	34
5	13	31	35
5	15	15	18
6	1	53	54
6	2	46	45
6	4	28	26
6	5	41	44
6	6	16	13
6	7	48	48
6	9	21	21
6	13	30	31
6	15	20	20
7	1	58	64
7	3	43	49
7	4	22	22
7	5	16	17
7	7	13	11
7	10	21	22
7	12	16	12
7	13	18	20
8	1	35	40
8	2	16	16
8	4	14	14
8	5	29	29
8	6	25	27
8	7	37	36
8	8	39	36
8	9	16	18
8	10	48	45
8	12	19	19
8	13	18	15
9	1	28	29
9	6	24	22
9	8	41	40
9	10	43	41
9	11	27	23
10	1	18	13
10	2	49	52
10	4	61	68
10	6	15	17
10	8	28	28
10	9	16	13
10	10	36	37
11	1	21	24
11	2	28	28
11	4	45	42
11	6	40	41
11	8	22	24
12	2	36	34
12	4	31	31
12	6	21	17
13	3	29	26

H= 10

K	L	FO	FC
0	6	24	23
0	8	18	16
1	0	89	88
1	2	55	55
1	3	17	14
1	5	40	39
1	6	34	37
1	7	53	54
1	8	25	25
1	9	54	54
1	11	30	30
2	0	58	53
2	2	32	34
2	3	15	16
2	5	24	26
2	6	17	13
2	9	18	20
3	0	26	29
3	1	14	11
3	2	37	38
3	3	39	40
3	4	47	46
3	5	37	39
3	6	38	35
3	9	22	21
3	10	37	34
3	11	33	38
3	12	41	42
4	6	17	17
4	8	22	22
4	9	23	23
4	11	17	16
5	0	19	26
5	1	31	31
5	2	31	36
5	3	72	74
5	4	19	20
5	5	59	59
5	7	14	15
5	9	16	16
5	10	28	28
5	12	22	24
6	0	30	28
6	3	29	27
6	4	16	16
6	5	23	28
6	6	31	33
7	0	26	26
7	2	21	28
7	5	29	29
7	6	23	28
7	7	36	39
7	8	20	21
7	9	47	52
8	2	16	18
8	3	21	28
8	4	32	31
8	5	17	17
8	6	24	25
9	0	67	66
9	1	16	14
9	2	56	56
9	3	32	33
9	5	27	27
9	6	34	33
10	0	18	17
10	2	16	13

H= 11

K	L	FO	FC
0	4	15	28
0	6	55	52
0	8	56	53
1	1	25	27
1	2	42	43
1	3	21	23
1	4	40	39
1	8	24	28
2	1	52	53
2	2	29	32
2	3	34	34
2	4	36	34
2	5	17	13
2	6	27	26
3	1	31	34
3	2	36	37
3	4	32	33
3	5	28	28
3	6	20	21
3	7	35	33
4	1	32	36
4	3	26	31
4	5	29	31
5	1	22	28
5	5	23	25
6	1	31	29
6	2	23	26
6	3	20	19

Table I. Observed (FO) and Calculated (FC) Structure Factors for Cu_2(Dapsa)(OAc).

K	L	FO	FC
	H=-21		
0	2	70	75
1	2	22	19
3	1	23	26
3	2	19	23
4	1	49	57
4	2	22	27
	H=-20		
0	4	21	15
1	1	59	63
1	3	41	48
1	4	19	14
1	5	19	19
2	1	22	20
2	2	40	42
2	3	50	54
2	5	46	48
3	1	35	36
3	3	15	13
3	4	39	40
4	1	26	26
5	2	23	22
5	3	20	16
5	4	46	58
6	2	62	68
7	1	19	15
7	2	21	18
7	3	19	19
	H=-19		
0	2	20	24
0	4	18	22
0	6	26	29
1	2	31	32
1	4	19	23
1	5	15	9
2	1	19	17
3	1	22	22
3	2	30	28
3	4	27	26
3	5	17	19
4	3	33	38
4	6	15	11
5	1	23	24
5	5	22	24
7	1	22	25
7	5	17	20
8	3	30	31
9	2	20	19
9	4	16	22
11	2	21	20
	H=-18		
4	1	15	13
5	2	15	19
6	4	21	18
8	3	23	19
9	2	17	16
	H=-17		
0	2	62	57
0	4	49	52
0	6	34	29
1	2	31	25
1	3	28	27
1	4	41	39
1	6	29	30
2	1	22	15
2	2	29	25
2	3	27	29
3	1	39	36
3	2	37	34
3	3	45	45
3	4	20	19
3	6	24	26
3	7	19	21
4	1	67	63
4	2	21	23
4	3	17	15
4	5	46	46
4	7	17	17
5	1	19	18
5	2	18	15
5	3	46	47
5	7	15	19
7	1	17	13
7	3	53	65
7	7	16	18
8	1	68	57
8	2	19	15
8	4	30	30
8	5	30	30
9	1	24	28
9	2	24	19
9	6	20	19
10	1	28	23
10	2	20	18
11	2	20	21
11	4	35	36
12	2	39	38
12	4	25	24
13	4	17	13
14	3	16	7
15	1	23	17
	H=-16		
0	2	33	33
0	4	79	79
0	6	43	44
1	3	49	46
1	4	35	30
1	5	33	31
1	7	62	60
1	8	20	18
2	2	32	33
2	3	57	59
2	4	27	25
2	5	65	67
2	6	41	39
2	8	34	30
3	1	38	41
3	2	33	35
3	4	52	52
3	5	42	44
3	6	29	30
3	7	42	43
4	1	26	26
4	2	15	10
4	3	27	25
4	4	49	48
4	5	17	16
4	6	17	18
4	7	27	27
5	1	14	12
5	2	30	26
5	3	36	33
5	4	65	66
5	6	26	26
5	7	17	12
5	8	27	28
6	1	16	11
6	2	61	66
6	3	21	16
6	4	18	12
6	5	20	17
6	6	58	57
6	8	51	49
7	1	25	26
7	2	62	61
7	3	39	38
7	4	31	34
7	5	20	25
7	6	15	11
8	1	20	21
8	3	30	32
8	4	32	30
9	1	36	41
9	4	43	44
9	5	42	41
9	6	22	24
9	7	38	39
10	1	25	25
10	2	34	33
10	3	43	45
10	5	53	54
10	6	30	31
11	1	17	17
11	2	38	38
11	3	14	13
11	5	18	18
11	6	21	21
12	1	17	20
12	4	29	32
12	5	22	22
12	6	18	22
13	1	21	22
13	4	31	28
13	5	18	16
14	2	22	20
14	3	35	40
15	1	31	27
16	1	28	26
	H=-15		
0	2	58	48
0	4	58	48
0	6	93	98
0	8	21	18
1	1	23	14
1	2	35	34
1	3	62	63
1	4	79	79
1	6	22	21
1	7	32	29
1	8	53	51
2	1	22	25
2	2	16	9
2	3	38	33
2	4	25	22
2	5	52	53
2	7	26	25
2	8	23	20
3	1	35	35
3	2	54	50
3	3	19	18
3	4	51	51
3	5	61	60
3	6	15	14
3	7	26	24
3	8	42	40
4	1	51	48
4	2	35	30
4	3	102	107
4	4	22	24
4	5	52	52
4	6	32	31
4	7	36	36
5	1	13	16
5	2	77	77
5	3	20	18
5	4	33	37
5	5	34	33
5	6	36	32
5	7	38	34
6	2	33	36
6	4	52	51
6	8	20	23
7	1	39	42
7	2	35	36
7	3	17	16
7	5	46	42
7	6	14	13
7	7	40	39
7	8	18	15
8	1	50	49
8	2	18	16
8	3	91	89
8	4	18	17
8	5	26	25
8	6	44	44
8	7	40	39
8	8	25	24
9	2	34	31
9	3	49	47
9	4	38	37
9	5	35	32
9	6	22	21
10	1	27	38
10	2	26	21
10	4	28	28
10	5	34	38
11	2	28	31
11	3	15	15
11	4	47	51
12	2	20	23
12	4	33	33
12	5	16	15
12	6	56	55
13	1	20	19
13	2	38	40
13	3	34	34
13	4	27	24
13	6	20	17
14	1	28	27
14	5	16	16
15	1	39	42
15	2	19	20
15	5	29	32
16	1	29	24
16	3	32	34
16	4	17	19
17	1	15	14
17	2	27	27
	H=-14		
0	2	75	73
0	4	16	15
0	6	15	28
1	1	49	44
1	2	32	30
1	3	35	35
1	4	22	19
1	5	62	61
1	7	18	16
1	9	29	27
2	1	79	76
2	2	19	18
2	3	93	90
2	4	62	63
2	5	26	24
2	6	17	13
2	7	52	47
2	9	23	21
3	1	16	11
3	2	103	94
3	3	40	41
3	4	35	34
3	5	28	26
3	6	26	25
3	8	32	31
4	1	42	44
4	2	19	15
4	3	27	28
4	4	16	12
4	7	24	20
4	9	26	22
5	1	51	48
5	2	87	86
5	3	17	14
5	4	45	45
5	6	25	21
5	8	30	28
5	9	18	13
6	1	12	6
6	3	29	27
6	4	66	67
6	6	51	49
7	1	62	60
7	2	49	51
7	3	23	21
7	4	28	26
7	5	35	29
7	6	25	21
7	8	19	18
8	1	28	30
8	2	41	39
8	3	13	8
8	4	19	19
8	7	16	13
9	2	72	70
9	3	30	30
9	5	26	24
9	6	23	22
9	8	17	15
10	1	63	61
10	2	25	27
10	3	63	60
10	4	16	19
10	7	43	43
11	1	26	24
11	2	16	9
11	3	16	16
11	4	30	30
11	5	28	29
11	7	18	14
12	1	21	22
12	2	41	38
12	3	17	16
12	4	23	20
12	6	19	15
13	1	31	29
13	2	22	21
13	3	20	18
13	5	32	30
14	1	47	47
14	3	17	15
14	4	27	29
14	5	21	21
14	6	20	21
15	1	26	27
15	2	36	37
15	3	22	23
15	4	19	19
16	3	18	14
17	2	40	39
18	3	18	13
	H=-13		
0	6	14	15
1	3	16	15
1	8	16	12
2	4	16	15
2	5	20	22
2	6	17	14
3	4	31	31
3	6	22	26
4	2	15	11
4	4	12	13
4	5	26	28
4	7	14	11
5	4	19	21
6	4	22	19
7	3	25	28
7	7	14	11
8	1	20	25
8	2	23	23
8	4	16	16
8	5	13	14
8	6	15	18
9	4	18	19
9	6	30	29
10	1	14	20
11	1	21	18
12	3	13	11
13	1	22	21
	H=-12		
0	2	14	12
0	4	80	77
0	6	43	48
0	8	29	24
1	1	61	68
1	2	78	76
1	3	64	64
1	4	49	58
1	6	24	22
1	7	35	35
1	9	21	17
2	1	59	51
2	2	38	39
2	3	46	46
2	5	54	51
2	6	36	36
2	9	29	29
3	1	52	51
3	2	35	34
3	4	26	23
3	5	47	45
3	7	29	29
4	1	85	84
4	3	74	73
4	4	21	22
4	7	22	21
5	1	23	24
5	2	16	14
5	3	34	35
5	4	46	46
5	5	50	47
5	6	41	41
6	1	13	12
6	2	84	83
6	4	27	25
6	6	40	43
6	8	55	52
7	1	22	21
7	2	22	23

Table I. (continued)

K	L	FO	FC
7	3	41	41
7	4	39	39
7	5	24	24
7	6	14	14
7	8	22	23
8	1	51	48
8	3	41	41
8	4	33	32
9	1	62	62
9	2	45	44
9	3	12	13
9	4	13	11
9	5	17	20
9	7	27	27
10	1	21	18
10	2	26	25
10	3	30	33
10	5	37	40
10	7	14	12
10	9	25	22
11	1	37	38
11	2	45	45
11	3	19	19
11	4	22	24
11	6	14	17
11	7	21	23
11	8	15	13
12	1	24	26
12	4	30	28
12	5	15	15
12	6	24	22
13	1	22	20
13	2	23	26
13	3	53	52
13	4	27	29
13	7	24	24
14	2	19	23
14	3	23	22
14	5	21	19
15	1	15	16
15	5	20	20
16	1	27	25
16	3	27	26
17	4	32	29
17	6	19	15
18	2	32	29
	H=-11		
0	2	111	112
0	4	50	51
0	6	102	101
0	8	24	27
0	10	39	35
1	1	54	54
1	2	105	104

K	L	FO	FC
1	3	127	119
1	4	92	89
1	5	24	29
1	6	21	19
1	7	27	27
1	8	52	47
1	9	22	20
1	10	17	15
2	1	154	154
2	2	72	69
2	3	36	33
2	4	74	71
2	5	73	72
2	7	35	35
2	8	31	29
2	9	26	23
3	1	67	69
3	3	58	56
3	4	98	97
3	5	96	94
3	6	39	37
3	7	20	20
3	8	31	30
3	9	20	19
3	10	31	32
4	1	30	28
4	2	36	38
4	3	137	137
4	4	39	36
4	5	56	53
4	6	40	39
4	7	41	41
4	9	56	54
4	10	16	14
5	1	92	92
5	2	104	101
5	3	37	32
5	4	29	22
5	5	46	48
5	6	44	46
5	7	30	32
5	8	18	18
6	1	20	14
6	2	105	105
6	4	116	116
6	5	32	28
6	6	13	13
6	8	33	32
6	10	16	13
7	1	98	101
7	2	93	93
7	3	57	53
7	5	53	53
7	6	40	39
7	7	65	65
8	1	44	43

K	L	FC	FC
8	2	55	54
8	3	101	99
8	4	15	13
8	5	46	47
8	6	41	43
8	7	39	38
8	8	18	18
8	9	43	43
9	1	26	25
9	3	67	67
9	4	44	44
9	5	41	43
9	6	16	18
9	8	25	23
9	9	27	29
10	1	105	110
10	4	32	29
10	5	49	48
10	6	28	24
10	7	36	34
11	1	25	25
11	2	59	63
11	3	57	60
11	4	68	69
11	5	17	17
11	8	44	43
12	1	20	16
12	2	49	49
12	4	33	36
12	5	19	19
12	6	65	65
13	1	22	22
13	2	40	43
13	3	55	59
13	5	21	25
13	6	21	20
13	7	31	32
13	8	28	30
14	1	43	43
14	2	57	56
14	3	27	27
14	4	33	32
14	5	21	21
14	7	23	24
15	1	27	26
15	3	18	16
15	4	33	32
15	5	60	58
15	7	23	23
16	3	51	52
16	4	30	30
16	6	16	20
16	7	22	24
17	1	19	21
17	2	36	34
17	5	16	15

K	L	FO	FC
17	6	33	34
18	2	20	23
18	4	32	36
18	5	16	16
19	1	31	27
19	2	22	20
19	4	19	17
19	5	17	20
20	1	26	23
20	2	18	19
20	3	21	28
	H=-10		
0	2	236	223
0	4	13	11
0	5	12	0
0	6	58	55
0	8	65	64
1	1	138	130
1	2	48	46
1	3	16	17
1	4	80	75
1	5	95	93
1	6	57	52
1	9	53	46
1	10	38	35
2	1	126	123
2	3	138	131
2	4	78	76
2	5	26	25
2	6	49	48
2	7	53	54
2	8	16	16
2	9	35	38
2	10	36	37
3	1	55	54
3	2	87	87
3	3	136	132
3	4	110	101
3	5	40	42
3	7	39	40
3	8	54	55
3	9	43	40
4	1	114	116
4	2	88	87
4	3	89	85
4	4	44	38
4	5	83	80
4	6	33	30
4	9	50	46
5	1	125	122
5	2	134	134
5	3	55	50
5	4	39	37
5	5	45	46

K	L	FO	FC
5	6	71	72
5	7	44	45
5	8	34	31
6	1	17	9
6	2	29	26
6	3	37	36
6	4	123	121
6	6	28	31
6	8	35	33
6	9	15	12
6	10	50	49
7	1	145	138
7	2	93	96
7	3	80	79
7	4	12	3
7	5	44	41
7	6	29	29
7	7	44	46
7	9	14	5
8	1	120	121
8	2	102	97
8	3	38	37
8	4	12	9
8	5	63	57
8	6	50	53
8	7	14	13
8	8	32	34
8	9	25	27
9	2	91	91
9	3	65	66
9	4	77	76
9	5	42	42
9	8	45	43
9	9	32	33
10	1	75	77
10	2	37	37
10	3	73	77
10	4	44	45
10	5	19	21
10	6	22	22
10	7	57	58
10	8	41	40
10	9	24	19
11	1	38	35
11	2	14	11
11	3	23	25
11	4	55	56
11	5	16	18
11	6	28	25
11	9	26	25
12	1	16	12
12	2	106	106
12	3	60	61
12	4	24	27
12	6	27	29
12	8	37	37

K	L	FO	FC
13	1	64	62
13	2	15	13
13	4	28	27
13	5	55	53
13	6	44	41
13	8	23	22
14	1	47	44
14	2	21	18
14	3	42	44
14	4	28	26
14	5	27	29
14	6	36	33
14	7	42	41
15	1	36	37
15	2	22	22
15	3	57	55
15	4	26	23
15	5	20	20
15	7	35	33
15	8	22	21
16	1	21	20
16	3	28	29
16	4	32	31
16	5	34	36
17	1	15	14
17	2	51	48
17	6	34	35
18	1	18	16
18	3	22	23
18	4	38	38
19	1	40	35
19	2	21	20
19	3	28	28
20	1	29	33
20	2	21	19
21	2	21	20
21	3	22	19
	H= -9		
0	2	37	31
0	4	47	52
0	6	23	18
0	8	39	38
0	10	42	39
1	1	110	104
1	2	13	6
1	3	15	10
1	4	66	63
1	5	94	93
1	6	35	31
1	7	66	63
1	9	25	18
1	10	24	21
1	11	18	16
2	1	28	28

K	L	FO	FC
2	2	77	71
2	3	114	120
2	4	89	79
2	5	27	30
2	6	19	15
2	8	24	21
2	9	18	17
2	10	16	13
3	1	76	74
3	2	88	84
3	3	53	54
3	4	14	7
3	5	25	24
3	6	42	40
3	7	51	49
3	9	32	28
4	1	84	83
4	2	11	14
4	3	35	37
4	4	58	57
4	5	77	75
4	7	25	24
4	8	17	20
4	10	19	17
5	1	20	11
5	2	41	40
5	3	51	47
5	4	89	92
5	5	58	55
5	6	31	28
5	8	47	43
5	9	31	29
6	2	117	117
6	3	29	26
6	4	23	25
6	6	96	100
6	8	21	24
6	9	17	12
6	10	21	19
7	2	11	13
7	3	80	76
7	4	43	43
7	5	36	35
7	6	22	23
7	9	31	28
8	1	82	79
8	2	21	20
8	4	71	71
8	5	43	41
8	6	24	25
8	7	15	15
8	8	16	14
8	9	22	22
8	10	26	22
9	1	83	83
9	2	57	61

K	L	FO	FC
9	3	58	44
9	5	21	19
9	6	28	28
9	7	27	28
9	8	14	17
10	2	48	44
10	3	90	93
10	5	32	29
10	6	21	23
10	7	23	21
10	9	23	21
11	1	47	44
11	2	53	51
11	5	47	47
11	6	14	16
11	7	16	18
11	8	15	16
12	2	38	36
12	4	30	32
12	7	23	21
12	8	37	34
12	9	25	25
13	1	58	51
13	2	13	12
13	3	17	17
13	4	34	35
13	5	21	28
13	6	25	25
13	7	20	28
14	2	18	16
14	3	25	25
14	4	21	23
14	5	33	36
15	2	26	26
15	3	32	33
15	5	16	13
15	7	17	19
16	1	41	39
16	2	18	22
16	3	36	37
16	7	27	27
17	2	20	15
17	3	15	28
17	4	32	31
17	5	28	28
18	2	33	33
18	6	17	13
19	2	20	19
19	3	28	29
19	4	16	12
20	1	23	23
20	4	25	22
21	1	34	31
21	2	17	12
21	3	21	18

Table I. (continued)

K	L	FO	FC
	H= -8		
0	2	76	61
0	4	105	100
0	6	15	14
1	1	25	22
1	2	126	108
1	3	35	27
1	4	33	30
1	5	16	16
1	6	22	22
1	9	32	30
1	10	20	16
2	1	9	4
2	2	10	1
2	3	85	70
2	5	41	35
2	7	39	39
2	8	22	23
2	9	16	11
3	1	22	15
3	2	65	51
3	3	73	64
3	4	19	17
3	5	37	37
3	6	60	58
3	8	19	20
3	10	18	18
4	1	53	49
4	2	87	74
4	3	140	128
4	5	16	17
4	6	29	27
4	7	20	23
4	9	26	24
5	1	143	135
5	2	28	28
5	3	30	32
5	5	12	11
5	6	13	10
5	7	16	20
5	8	24	27
6	1	57	48
6	2	23	15
6	4	39	39
6	8	18	26
7	1	35	31
7	2	36	32
7	3	16	18
7	5	44	43
7	6	34	38
7	9	20	19
8	2	48	43
8	3	46	46
8	4	21	20
8	7	26	30

K	L	FO	FC
8	8	30	33
9	1	27	25
9	2	46	48
9	3	50	47
9	4	33	32
9	5	18	17
9	6	24	24
9	9	18	21
10	1	35	35
10	2	13	11
10	3	24	24
10	4	47	50
10	5	24	21
10	7	29	31
11	1	14	12
11	2	24	22
11	3	36	36
11	4	13	20
11	7	17	20
12	1	42	43
12	3	15	16
12	4	34	38
12	5	19	23
12	6	21	20
13	1	15	23
13	2	21	20
13	3	28	27
13	4	20	20
13	7	26	28
14	2	26	26
14	4	41	45
14	6	14	14
14	8	23	25
15	1	16	16
15	2	16	13
15	3	37	36
15	5	21	27
15	6	25	23
16	1	21	21
16	2	36	38
16	3	26	23
16	4	13	14
17	1	55	55
18	4	20	20
19	1	17	17
19	5	23	23
21	3	24	21
22	1	21	17
	H= -7		
0	2	88	91
0	6	59	48
1	1	12	16
1	2	77	77
1	3	34	31

K	L	FO	FC
1	4	121	103
1	5	54	52
1	6	30	31
1	7	26	16
1	8	22	23
1	9	23	19
2	1	127	119
2	2	51	47
2	4	36	33
2	5	23	27
2	6	19	23
2	7	18	19
2	9	20	15
2	10	23	21
2	11	20	20
3	1	77	70
3	2	121	92
3	3	19	15
3	4	52	53
3	5	52	53
3	6	39	38
3	7	22	23
3	8	15	16
3	9	27	22
3	11	18	14
4	1	49	45
4	2	10	14
4	3	140	130
4	4	10	10
4	5	23	25
4	6	15	15
4	7	49	53
4	9	13	11
5	1	11	15
5	2	53	52
5	3	13	14
5	4	16	17
5	5	18	17
5	6	29	28
5	7	19	12
5	8	23	22
6	1	47	39
6	2	64	61
6	4	85	86
6	6	17	26
6	8	16	13
6	10	30	34
7	1	60	63
7	2	36	36
7	4	43	45
7	5	17	12
7	7	17	11
7	8	39	39
8	1	49	50
8	2	64	64
8	3	53	53

K	L	FO	FC
8	5	13	10
8	6	28	23
8	7	33	35
8	9	20	22
9	1	19	22
9	2	17	15
9	3	53	55
9	4	43	46
9	5	46	46
9	6	20	18
10	1	85	95
10	3	23	24
10	4	49	51
10	5	22	24
10	6	25	30
10	7	13	9
11	2	50	47
11	3	28	24
11	4	36	37
11	6	22	21
11	9	20	20
12	2	24	23
12	3	14	17
12	4	15	7
12	6	20	18
13	2	35	32
13	3	45	46
13	4	27	25
13	5	20	20
13	6	26	26
13	9	15	12
14	1	27	28
14	2	40	40
14	3	27	38
14	4	18	11
14	5	18	20
15	1	54	53
15	2	23	25
15	4	28	30
15	5	21	24
16	1	13	16
16	3	27	27
16	7	19	23
17	1	20	19
17	2	26	25
18	2	21	24
18	4	35	37
19	1	19	17
19	5	14	12
19	6	16	16
20	1	19	21
20	2	14	12
21	3	26	23
22	1	26	24

K	L	FO	FC
	H= -6		
0	2	297	280
0	4	285	250
0	6	133	129
0	8	103	100
1	1	91	87
1	2	64	59
1	3	9	2
1	4	105	98
1	5	83	80
1	6	120	117
1	7	95	92
1	8	25	20
1	10	28	30
1	11	31	30
2	1	79	81
2	2	71	59
2	3	104	97
2	4	64	57
2	5	13	14
2	6	58	60
2	7	141	135
2	9	42	43
2	10	24	23
3	1	70	69
3	2	61	59
3	3	151	144
3	4	143	147
3	5	48	48
3	6	20	19
3	7	54	52
3	8	66	71
3	9	45	47
3	10	29	33
4	1	179	169
4	2	122	118
4	3	94	90
4	4	29	30
4	5	174	179
4	6	26	30
4	8	62	61
4	9	40	45
4	11	24	23
5	1	128	125
5	2	66	65
5	3	179	179
5	5	12	5
5	6	44	41
5	7	75	81
5	8	78	87
5	9	25	24
5	11	17	14
6	1	10	1
6	4	41	45
6	5	49	53

K	L	FO	FC
6	6	124	129
6	10	42	45
7	1	133	137
7	2	59	58
7	3	135	136
7	4	10	14
7	5	12	9
7	6	84	85
7	7	104	110
7	8	59	59
7	9	27	31
7	11	19	16
8	1	57	61
8	2	121	123
8	3	77	85
8	4	45	46
8	5	121	130
8	6	43	45
8	7	25	27
8	8	25	26
8	9	24	29
9	2	15	18
9	3	59	65
9	4	49	52
9	5	75	80
9	6	34	39
9	8	43	51
9	9	36	38
9	10	18	19
10	1	38	39
10	2	25	31
10	3	97	103
10	4	48	50
10	5	23	28
10	6	19	17
10	7	71	77
10	9	40	45
10	10	18	13
11	1	36	34
11	2	25	26
11	3	18	16
11	4	108	110
11	5	77	77
11	6	91	97
11	7	33	34
11	8	19	22
11	10	25	29
12	1	20	18
12	2	132	139
12	3	34	39
12	4	92	100
12	6	54	53
12	8	56	59
13	1	37	38
13	2	51	52
13	3	13	15

K	L	FO	FC
13	4	14	13
13	5	34	36
13	6	27	26
13	7	25	25
13	9	18	14
14	1	73	70
14	2	35	32
14	3	19	13
14	4	26	27
14	5	38	39
14	6	43	50
14	7	37	40
15	1	65	63
15	2	15	17
15	3	99	103
15	4	63	67
15	7	33	36
15	8	25	27
16	1	82	82
16	2	26	29
16	3	39	38
16	5	63	65
16	8	20	19
17	1	33	35
17	2	30	29
17	3	47	48
17	6	21	20
17	8	28	27
18	2	25	21
18	4	34	33
18	5	27	28
18	6	18	18
19	1	31	32
19	2	15	16
19	3	38	35
19	4	26	28
19	6	30	27
19	7	35	32
20	1	22	20
20	2	50	48
20	5	33	33
21	4	15	6
21	5	30	28
22	1	17	17
22	2	17	15
22	3	24	22
	H= -5		
0	2	53	50
0	4	93	99
0	6	48	48
0	8	58	52
0	10	62	62
1	1	168	167
1	2	19	19

K	L	FO	FC
1	3	39	38
1	4	58	56
1	5	137	132
1	6	76	73
1	7	119	118
1	8	25	19
1	10	31	31
1	11	40	43
2	1	13	9
2	2	68	77
2	3	213	207
2	4	26	24
2	5	138	136
2	6	139	144
2	7	82	78
2	8	24	24
2	9	78	79
2	10	18	17
3	1	118	111
3	2	116	112
3	3	72	72
3	4	109	108
3	5	34	35
3	6	62	59
3	7	83	91
3	8	74	72
3	9	48	42
4	1	58	61
4	2	108	94
4	3	18	24
4	4	28	29
4	5	47	47
4	6	13	18
4	7	114	117
4	8	48	43
4	11	42	41
5	1	31	29
5	2	105	105
5	3	43	44
5	4	165	178
5	5	82	88
5	6	41	42
5	8	71	79
5	9	41	45
5	10	48	54
5	11	21	24
6	1	13	11
6	2	192	202
6	3	9	6
6	4	37	41
6	5	14	15
6	6	175	189
6	8	91	94
6	10	32	35
7	1	28	27
7	2	45	44

Table I. (continued)

K	L	FO	FC
7	3	44	48
7	4	123	132
7	5	57	62
7	6	44	48
7	7	13	16
7	8	41	40
7	9	42	41
7	10	25	26
7	11	31	29
8	1	68	70
8	2	12	5
8	4	53	53
8	5	83	86
8	6	68	71
8	7	45	42
8	8	39	38
8	10	27	27
9	1	151	160
9	2	68	72
9	3	96	104
9	4	73	74
9	5	67	77
9	6	64	67
9	7	88	91
9	8	70	71
9	9	15	20
10	2	41	41
10	3	133	140
10	4	22	24
10	5	109	115
10	6	50	52
10	7	48	50
10	8	20	23
10	9	45	48
11	1	78	84
11	2	17	22
11	3	62	63
11	4	41	44
11	5	38	45
11	6	45	44
11	7	45	47
11	8	24	19
12	1	24	22
12	2	61	65
12	3	53	55
12	4	75	73
12	8	22	21
12	9	24	25
12	10	34	30
13	1	134	139
13	2	13	13
13	3	32	35
13	4	52	49
13	5	82	82
13	6	35	37
13	7	63	66

K	L	FO	FC
14	1	22	29
14	2	71	71
14	3	73	74
14	5	22	18
14	6	66	67
14	7	19	18
14	9	48	41
15	1	64	66
15	2	26	29
15	3	42	40
15	4	28	31
15	5	20	21
15	6	14	14
15	7	17	21
15	8	19	16
15	9	28	24
16	1	38	38
16	2	62	65
16	5	24	26
16	6	30	27
16	7	46	43
16	8	20	19
17	2	47	49
17	3	14	11
17	4	76	73
17	5	24	24
17	8	39	37
18	2	85	84
18	3	14	14
18	6	46	47
19	3	25	22
19	4	18	21
19	6	17	15
20	1	19	20
20	3	21	28
20	4	21	20
20	5	45	42
20	6	22	21
21	1	62	60
21	3	38	39
21	4	16	12
21	5	27	27
22	2	17	16
22	3	33	29
23	1	18	15
23	3	17	15
	H= -4		
0	2	31	36
0	4	153	146
0	6	141	135
0	10	67	73
1	1	97	82
1	2	151	145
1	3	73	74

K	L	FO	FC
1	4	66	62
1	5	50	51
1	6	37	40
1	7	22	22
1	8	65	67
1	9	23	25
1	10	14	12
2	1	50	46
2	2	85	73
2	3	41	41
2	4	80	76
2	5	95	98
2	7	45	47
2	8	35	37
2	9	24	28
2	11	31	29
3	1	182	164
3	2	130	129
3	3	25	16
3	4	10	11
3	5	58	62
3	6	108	108
3	7	41	45
3	8	35	32
3	9	21	22
3	10	30	34
3	11	32	32
4	1	126	124
4	2	55	51
4	3	120	120
4	4	69	74
4	5	17	17
4	6	41	46
4	7	104	109
4	8	16	14
4	9	47	49
4	10	16	19
4	11	22	26
5	1	91	90
5	2	23	22
5	3	42	42
5	4	57	60
5	5	71	74
5	6	22	24
5	7	34	35
5	8	17	18
5	9	31	36
5	10	19	16
5	11	27	30
6	1	28	26
6	2	58	63
6	3	48	50
6	4	51	54
6	5	11	9
6	7	24	24
6	8	21	22

K	L	FO	FC
7	1	108	117
7	2	41	43
7	3	80	88
7	4	64	67
7	5	128	137
7	6	17	23
7	8	17	17
7	9	43	44
7	10	22	21
7	11	24	23
8	1	98	106
8	2	26	27
8	3	115	125
8	4	62	66
8	5	27	31
8	6	61	63
8	7	79	80
8	9	13	10
8	10	34	35
8	11	17	17
9	1	64	63
9	2	26	31
9	3	27	31
9	4	15	14
9	5	53	58
9	6	54	59
9	7	28	27
9	8	31	32
9	10	15	15
10	1	52	51
10	2	21	23
10	3	20	22
10	4	33	34
10	5	50	52
10	6	36	37
10	7	15	13
10	9	16	11
11	2	141	145
11	3	41	40
11	4	65	68
11	6	44	42
11	8	42	44
12	2	26	26
12	3	17	16
12	4	95	100
12	6	71	73
12	7	19	17
12	10	36	33
13	2	35	38
13	3	12	12
13	4	33	35
13	5	27	28
13	7	16	20
13	8	24	23
13	9	21	23
14	1	21	22

K	L	FO	FC
14	2	33	31
14	3	48	47
14	4	36	35
14	5	42	45
14	8	22	22
14	9	26	27
15	1	76	77
15	2	45	46
15	3	25	26
15	5	52	52
15	6	27	26
15	7	32	35
15	8	15	11
15	9	18	15
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18	7	17	14
19	1	28	32
19	2	30	30
19	3	21	18
19	4	27	24
19	5	50	48
20	1	19	19
20	3	36	36
20	4	21	21
21	1	16	16
21	5	17	17
22	4	27	22
22	5	18	18
23	2	35	32
	H= -3		
0	2	8	8
0	6	52	57
0	8	31	31
0	10	15	9
1	1	14	9
1	2	26	24
1	3	104	97
1	4	65	59
1	5	17	27
1	6	42	45
1	8	14	13

K	L	FO	FC
1	9	19	17
2	1	7	9
2	4	18	17
2	5	24	28
2	6	40	41
2	7	25	26
2	8	12	9
2	11	21	19
3	1	30	26
3	3	13	6
3	4	60	52
3	5	38	37
3	6	26	27
3	7	25	24
3	8	27	28
3	10	19	15
4	1	37	36
4	2	8	10
4	3	50	54
4	4	55	51
4	5	55	59
4	7	23	26
4	8	13	18
4	11	15	9
5	1	17	19
5	2	111	112
5	3	28	32
5	6	34	37
5	7	15	18
5	8	13	15
6	1	14	20
6	2	18	26
6	3	31	31
6	4	61	67
6	7	17	17
6	8	20	24
7	1	13	23
7	2	9	13
7	3	38	38
7	6	33	31
8	1	32	32
8	2	19	13
8	3	68	66
8	4	25	23
8	5	44	44
8	6	16	15
8	7	16	12
8	8	24	21
9	1	39	41
9	2	34	29
9	3	39	42
9	4	29	26
9	5	37	43
9	6	13	13
9	10	24	21
10	1	9	8

K	L	FO	FC
10	3	11	15
10	5	32	32
10	7	33	35
11	1	24	25
11	4	12	15
11	5	27	27
11	6	20	26
12	1	45	47
12	2	12	7
12	6	19	13
12	9	14	11
13	1	17	15
13	2	27	24
13	3	45	46
13	7	13	9
13	9	15	9
14	1	50	51
14	4	13	17
14	5	27	28
15	2	12	14
16	4	14	15
16	5	13	14
17	2	25	22
17	3	14	7
18	2	15	15
18	4	22	20
19	2	13	8
20	2	14	12
20	3	16	12
	H= -2		
0	2	32	28
0	4	159	155
0	6	58	64
0	8	46	41
1	1	23	23
1	2	23	27
1	3	48	49
1	4	37	30
1	5	51	51
1	6	53	58
1	9	27	27
1	10	19	21
1	11	18	15
2	1	53	59
2	2	27	25
2	3	61	62
2	4	10	9
2	6	18	20
2	7	30	29
2	10	19	20
2	11	15	14
3	1	67	63
3	2	44	43
3	3	62	63

K	L	FO	FC
3	7	28	29
3	8	21	28
3	9	20	26
4	1	70	71
4	2	116	111
4	3	52	52
4	4	43	49
4	5	116	124
4	7	28	25
4	8	16	14
4	11	16	14
5	1	18	14
5	2	54	56
5	3	66	78
5	4	98	106
5	5	17	13
5	6	30	32
5	7	26	28
5	8	18	18
6	1	30	36
6	2	61	75
6	3	31	38
6	4	70	68
6	5	46	53
6	8	19	22
6	10	20	18
7	1	12	22
7	2	28	28
7	3	51	50
7	4	75	77
7	5	29	29
7	6	32	32
7	7	34	33
8	1	20	19
8	2	54	56
8	3	51	52
8	4	35	35
8	5	65	71
8	6	38	38
8	7	22	23
8	8	18	19
9	1	44	42
9	2	42	39
9	3	68	71
9	4	18	19
9	5	25	23
9	7	16	12
9	8	21	23
10	1	31	29
10	2	30	25
10	3	32	31
10	4	36	39
10	5	12	13
10	10	14	18
11	1	31	36
11	2	18	15

Table I. (continued)

K	L	FO	FC
11	3	23	19
11	4	24	29
11	5	24	26
11	6	58	59
11	7	13	11
11	10	19	12
12	1	18	17
12	2	43	49
12	4	46	48
12	5	23	23
12	7	19	25
12	8	19	18
13	5	16	21
13	6	15	12
13	7	15	14
14	1	12	17
14	2	13	12
14	5	20	17
14	7	25	26
15	2	25	26
15	3	33	30
15	6	16	10
15	7	15	15
15	9	18	18
16	1	17	9
16	2	25	21
16	3	14	11
16	4	25	25
16	5	24	23
16	6	18	18
16	7	17	16
17	6	14	14
18	1	16	9
18	4	14	19
18	5	19	20
19	3	18	19
19	6	16	16
20	1	13	10
20	5	18	17
21	1	17	18
21	3	15	13
	H= -1		
0	2	113	125
0	4	16	19
0	6	35	35
0	8	44	44
0	10	34	25
1	1	283	312
1	2	100	100
1	3	93	101
1	4	12	11
1	5	75	81
1	6	39	41
1	7	69	70
1	10	33	31
1	11	44	41
2	1	108	116
2	2	12	23
2	3	173	176
2	4	32	26
2	5	161	166
2	6	74	77
2	7	25	22
2	8	37	35
2	9	57	52
2	10	22	22
2	11	15	14
3	1	118	130
3	2	144	156
3	3	68	69
3	4	124	125
3	5	23	17
3	6	28	28
3	7	58	61
3	8	22	12
3	9	22	20
3	10	10	11
4	1	13	15
4	2	177	175
4	3	105	111
4	4	58	59
4	6	18	16
4	7	51	49
4	10	17	18
4	11	19	18
5	1	48	52
5	2	64	66
5	3	22	16
5	4	215	227
5	6	34	41
5	8	47	46
5	9	24	26
5	10	34	30
5	11	19	22
6	1	131	139
6	2	224	236
6	3	26	25
6	6	148	158
6	8	48	49
6	10	32	29
7	1	113	120
7	2	52	41
7	3	15	10
7	4	195	204
7	5	38	41
7	6	62	64
7	8	20	17
7	9	23	24
8	1	64	71
8	2	27	23
8	3	22	18
8	4	19	20
8	5	65	67
8	6	15	18
8	7	22	17
8	9	14	16
8	10	29	29
8	11	21	22
9	1	188	203
9	2	51	56
9	3	126	142
9	4	52	53
9	5	47	52
9	6	26	26
9	7	63	62
9	8	18	19
9	9	20	19
9	10	15	13
10	2	44	43
10	3	96	97
10	5	104	107
10	7	27	25
10	8	24	26
10	9	47	45
11	1	116	121
11	2	26	29
11	3	36	40
11	5	30	37
11	6	39	36
11	7	41	44
11	10	19	20
12	4	36	36
12	7	17	16
12	8	29	29
12	9	27	23
12	10	16	16
13	1	150	153
13	2	58	59
13	3	83	88
13	4	42	41
13	5	31	28
13	6	20	19
13	7	49	46
13	9	14	11
14	1	45	51
14	2	73	82
14	3	70	72
14	5	49	45
14	6	45	45
14	8	22	19
14	9	26	27
15	1	25	26
15	2	31	33
15	3	21	18
15	4	12	3
15	7	25	24
16	1	16	24
16	2	48	49
16	3	12	7
16	4	19	28
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16	6	25	22
16	7	22	19
17	1	12	15
17	2	24	28
17	4	64	58
17	6	19	18
17	8	33	33
18	1	23	23
18	2	87	89
18	3	28	26
18	6	48	48
18	8	25	23
19	4	31	27
19	6	23	20
20	2	16	20
20	3	21	25
20	5	37	36
21	1	48	43
21	3	28	29
22	2	16	17
22	3	27	21
22	5	25	24
23	1	21	23
23	3	15	16
	H= 0		
0	1	7	8
0	2	317	309
0	4	194	191
0	6	134	130
0	8	19	16
0	10	113	108
1	1	135	149
1	2	380	401
1	3	235	204
1	4	95	94
1	5	166	153
1	6	55	53
1	8	80	80
1	9	27	29
1	10	26	24
1	11	24	24
2	1	15	14
2	2	86	76
2	3	140	140
2	4	25	34
2	5	76	77
2	8	27	30
2	9	22	15
2	11	31	28
3	1	291	319
3	2	23	12
3	3	62	61
3	4	79	81
3	5	93	96
3	6	102	102
3	7	43	38
3	8	54	59
3	9	22	23
3	11	32	33
4	0	234	251
4	1	316	349
4	2	276	292
4	3	266	282
4	4	73	78
4	6	70	70
4	7	101	111
4	8	15	20
4	9	64	67
4	10	31	33
4	11	23	21
5	1	496	521
5	2	110	100
5	3	106	112
5	4	92	104
5	5	159	172
5	6	54	56
5	7	47	49
5	9	43	45
5	11	36	36
6	0	422	440
6	1	156	148
6	2	139	132
6	3	19	31
6	4	97	95
6	6	23	24
6	7	19	17
6	8	26	29
6	9	16	13
6	10	37	39
7	1	352	355
7	2	81	89
7	3	54	52
7	4	138	142
7	5	175	180
7	6	13	8
7	7	33	35
7	8	28	27
7	9	42	42
7	10	29	27
7	11	51	50
8	0	224	233
8	1	107	106
8	2	108	120
8	3	156	168
8	4	72	81
8	5	21	28
8	6	68	64
8	7	80	82
8	8	15	17
8	9	49	55
8	10	32	34
9	1	154	160
9	2	82	91
9	3	34	32
9	4	33	37
9	5	36	41
9	6	54	56
9	7	37	39
9	8	28	32
10	0	64	64
10	1	67	68
10	2	57	63
10	3	14	18
10	5	60	64
10	6	19	24
10	7	25	34
10	8	13	15
10	10	20	16
11	1	55	66
11	2	267	284
11	3	67	73
11	4	93	95
11	5	23	24
11	6	49	51
11	8	79	80
11	9	30	32
11	10	22	23
12	0	380	394
12	1	92	104
12	2	116	123
12	3	37	36
12	4	106	105
12	6	89	95
12	10	60	58
13	1	29	29
13	2	68	69
13	3	55	53
13	4	30	36
13	5	28	28
13	8	36	37
14	0	20	21
14	3	52	52
14	4	32	28
14	5	22	26
14	7	13	16
14	8	29	38
14	9	29	26
15	1	101	107
15	2	69	72
15	3	16	22
15	4	22	18
15	5	72	75
15	6	39	41
15	7	38	38
15	8	33	34
15	9	24	22
16	0	34	42
16	1	77	83
16	2	50	51
16	3	125	130
16	6	22	21
16	7	54	55
17	1	52	50
17	2	36	43
17	3	17	19
17	4	24	23
17	5	36	40
17	7	32	32
18	0	13	6
18	1	32	42
18	3	27	23
18	6	28	28
18	7	25	24
19	1	64	60
19	2	49	49
19	3	21	21
19	4	34	33
19	5	54	50
20	0	47	46
20	1	26	30
20	3	40	36
20	4	36	34
20	6	30	30
21	2	19	24
22	0	26	25
22	4	18	21
22	5	20	19
23	2	49	49
23	4	23	23
24	0	38	29
	H= 1		
0	2	50	43
0	4	99	94
0	6	32	28
0	8	21	19
1	1	101	91
1	2	35	38
1	3	150	130
1	5	160	146
1	7	30	28
1	8	34	33
1	9	60	55
1	10	14	11
1	11	24	19
2	0	213	213
2	1	328	345
2	2	188	171
2	3	123	118
2	4	135	131
2	5	102	101
2	6	36	35
2	7	102	103
2	8	28	24
2	10	43	42
2	11	51	49
3	0	154	155
3	1	48	58
3	2	89	78
3	3	169	161
3	5	63	63
3	6	88	89
3	8	31	32
3	9	30	27
3	10	38	34
3	11	18	12
4	0	19	11
4	1	19	28
4	3	36	33
4	4	38	44
4	7	12	18
4	8	14	17
4	9	18	16
4	11	30	32
5	0	107	117
5	1	99	105
5	2	188	179
5	3	15	18
5	4	18	6
5	5	16	15
5	6	138	143
5	7	42	37
5	8	52	50
5	9	26	27
6	0	204	217
6	1	20	18
6	2	132	126
6	3	10	9
6	4	308	315
6	5	24	28
6	6	72	72
6	8	51	52
6	10	45	45
7	0	72	86
7	1	28	34
7	2	166	169
7	3	27	33
7	4	46	45
7	6	76	80
7	7	31	33
7	8	27	38
7	9	26	27

Table I. (continued)

K	L	FO	FC
7	10	15	13
8	0	78	68
8	1	15	19
8	2	48	53
8	3	21	28
8	4	22	22
8	5	17	19
8	7	15	18
8	8	14	11
8	9	24	24
8	10	17	17
9	0	39	48
9	1	22	27
9	2	34	34
9	3	95	96
9	5	116	122
9	6	53	55
9	8	26	26
9	9	39	42
9	10	36	33
10	0	33	42
10	1	160	171
10	2	37	37
10	3	101	106
10	4	41	48
10	5	65	71
10	6	29	25
10	7	76	78
10	8	16	15
10	9	18	19
10	10	17	16
11	0	88	95
11	1	77	76
11	2	28	28
11	3	74	80
11	4	12	12
11	5	54	53
11	6	16	13
11	9	24	24
12	0	28	25
12	1	31	29
12	2	15	18
12	3	26	23
12	4	23	24
12	5	20	15
12	6	15	15
12	7	20	21
13	0	27	33
13	1	53	53
13	2	32	37
13	3	101	103
13	4	23	18
13	5	62	60
13	6	27	27
13	7	18	17
13	8	30	29

K	L	FO	FC
13	9	48	45
14	0	73	73
14	1	84	81
14	2	47	48
14	3	58	50
14	4	72	70
14	5	17	15
14	6	26	24
14	7	46	44
14	8	19	19
15	2	16	20
15	3	19	22
15	6	17	19
16	1	14	14
16	4	36	33
16	6	13	14
17	2	82	80
17	3	12	13
17	6	58	58
17	7	15	18
17	8	29	31
18	0	61	60
18	2	18	23
18	4	69	66
18	6	21	23
19	0	14	15
19	2	18	15
19	3	23	22
20	0	15	13
20	1	30	30
20	3	18	16
20	4	15	10
21	3	38	32
21	5	45	44
22	1	31	29
22	3	26	25
22	4	21	16
	H=	2	
0	0	7	6
0	2	41	38
0	4	166	148
0	6	77	79
0	8	55	44
0	10	15	9
1	0	7	12
1	1	32	35
1	2	8	13
1	3	74	69
1	4	26	15
1	5	88	79
1	6	51	50
1	10	24	26
1	11	18	16
2	0	11	10

K	L	FO	FC
2	1	40	44
2	3	108	105
2	4	31	28
3	0	92	96
3	1	93	83
3	2	34	35
3	3	34	34
3	4	39	36
3	5	13	6
3	6	18	24
3	7	31	31
3	8	16	22
3	9	18	17
3	10	25	24
4	1	85	83
4	2	111	100
4	3	15	16
4	4	14	16
4	5	103	106
4	6	15	17
4	7	31	28
4	8	21	20
4	9	20	20
4	11	27	24
5	0	49	42
5	2	95	91
5	3	64	73
5	4	127	123
5	5	27	23
5	7	33	31
6	1	36	42
6	2	44	49
6	3	14	21
6	4	121	117
6	5	52	56
7	0	77	70
7	1	39	41
7	2	48	44
7	3	59	60
7	4	54	54
7	5	26	28
7	7	47	46
8	1	27	26
8	2	60	59
8	3	47	43
8	4	49	50
8	5	62	64
8	6	19	17
8	7	24	22
8	8	20	19
8	9	15	16
9	0	49	46
9	1	14	2
9	2	69	63
9	3	42	44
9	4	23	27

K	L	FO	FC
9	5	13	15
9	7	14	9
9	10	18	18
10	0	17	19
10	1	38	34
10	2	25	19
10	3	38	39
10	4	24	24
10	8	15	12
11	0	17	7
11	1	17	28
11	2	17	21
11	3	37	37
11	4	14	17
11	5	19	20
11	6	50	51
12	0	10	14
12	1	36	37
12	2	32	40
12	3	36	45
12	4	55	55
12	7	13	17
12	8	24	20
13	0	11	18
13	2	22	25
13	3	27	28
13	5	15	13
14	0	14	15
14	5	13	7
14	7	14	8
15	3	25	22
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16	7	18	19
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19	3	21	24
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20	4	18	17
20	5	16	13
21	4	14	13
22	2	15	15
23	0	15	13
23	2	17	13
	H=	3	
0	0	12	5
0	2	64	57
0	4	115	95

K	L	FO	FC
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0	10	15	14
1	0	18	18
1	1	22	15
1	2	10	11
1	3	16	8
1	4	10	6
1	5	12	13
1	6	58	58
1	7	24	25
1	9	14	11
2	0	37	26
2	1	36	28
2	3	125	113
2	4	16	11
2	5	71	72
2	6	11	7
2	7	27	28
2	8	30	32
2	9	15	9
3	0	60	46
3	1	38	37
3	3	21	21
3	4	30	26
3	5	15	16
3	6	32	28
3	7	31	28
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4	2	68	65
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5	2	29	31
5	3	15	17
5	4	96	93
5	5	24	28
5	6	15	11
5	7	14	4
6	0	46	48
6	2	107	105
6	3	14	16
6	4	14	18
6	5	26	20
6	6	37	35
6	8	16	17
7	0	38	30
7	1	39	41
7	3	81	76
7	4	73	70
7	5	22	23
8	0	18	23
8	1	55	55
8	2	45	36

K	L	FO	FC
8	5	13	14
8	6	34	33
9	0	69	66
9	1	20	17
9	3	37	36
9	5	17	15
9	6	13	8
9	7	29	29
10	0	41	39
10	1	12	9
10	3	78	73
10	4	11	9
10	5	50	52
11	1	26	25
11	2	17	19
11	4	16	13
11	5	36	34
11	6	27	26
11	7	25	26
12	2	16	17
12	3	26	31
13	1	52	53
13	2	14	16
13	5	12	8
14	0	14	14
14	3	25	28
14	4	15	12
14	5	21	19
14	6	19	17
15	1	20	26
15	2	13	9
15	3	14	16
16	0	28	19
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16	2	30	31
16	3	12	11
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17	2	18	22
17	4	29	31
18	0	13	17
18	1	18	17
18	2	13	9
19	3	14	10
20	4	14	11
21	1	14	16
22	3	15	15
	H=	4	
0	0	256	241
0	2	89	84
0	4	178	156
0	6	202	191
0	8	22	19
0	10	71	71
1	0	21	19

K	L	FO	FC
1	1	142	123
1	2	136	129
1	4	104	101
1	5	33	37
1	6	34	29
1	8	86	84
1	10	33	30
2	0	89	70
2	1	55	54
2	2	26	19
2	4	57	48
2	6	13	10
2	7	16	16
2	9	28	25
3	0	72	65
3	1	184	160
3	2	112	104
3	4	57	60
3	5	81	79
3	6	32	30
3	7	51	51
3	8	29	29
3	9	27	25
3	11	29	31
4	0	135	118
4	1	50	48
4	2	52	46
4	3	157	152
4	4	91	90
4	5	44	44
4	6	68	69
4	7	104	101
4	9	71	71
4	10	22	20
5	0	38	37
5	1	113	109
5	2	19	17
5	3	11	3
5	5	93	89
5	6	32	31
5	7	61	58
5	8	26	25
5	9	33	35
6	0	42	36
6	1	13	11
6	3	53	53
6	4	17	14
6	5	13	13
6	6	13	17
6	7	23	22
7	0	14	15
7	1	150	154
7	2	50	51
7	3	50	52
7	4	23	21
7	5	137	135

K	L	FO	FC
7	6	22	21
7	7	38	34
7	8	34	34
7	9	23	21
7	10	18	12
8	0	93	93
8	1	60	62
8	2	72	71
8	3	141	147
8	4	51	53
8	6	63	64
8	7	64	66
8	9	33	34
8	10	29	27
9	0	34	34
9	1	43	42
9	2	19	19
9	3	18	18
9	4	45	47
9	5	74	73
9	8	26	26
10	0	63	63
10	1	11	16
10	2	19	19
10	4	32	34
10	5	21	22
10	6	31	32
11	0	12	14
11	2	131	138
11	3	12	11
11	4	84	84
11	5	13	11
11	6	36	36
11	7	25	25
11	8	62	61
11	10	19	19
12	0	144	149
12	1	11	14
12	2	43	42
12	3	25	24
12	4	91	96
12	6	79	88
13	1	21	24
13	2	48	47
13	3	17	18
13	4	34	39
13	5	18	18
13	6	14	17
13	8	24	24
14	0	15	19
14	1	41	41
14	3	22	21
14	7	28	16
14	9	24	23
15	0	21	19
15	1	78	77

Table I. (continued)

K	L	FO	FC
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15	4	29	29
15	5	49	50
15	7	38	38
15	8	17	18
16	0	34	34
16	1	49	49
16	3	62	62
16	4	22	21
16	5	16	18
16	6	20	18
16	7	31	34
17	2	16	19
17	5	16	14
17	7	21	18
18	0	19	20
18	3	31	28
18	7	18	12
19	1	45	44
19	2	31	31
19	4	15	14
19	5	38	39
20	0	31	30
20	1	14	15
20	3	41	38
20	4	21	18
21	5	22	18
22	0	31	28
22	2	18	14
23	2	35	33
24	0	29	25
H= 5			
0	0	51	46
0	2	41	47
0	4	27	22
0	6	56	61
1	0	74	66
1	1	50	53
1	2	12	15
1	3	150	149
1	4	42	38
1	5	180	175
1	6	36	37
1	8	19	20
1	9	69	68
1	10	15	16
1	11	32	30
2	0	101	99
2	1	218	209
2	2	36	35
2	3	145	134
2	4	154	146
2	5	108	104
2	6	63	55
2	7	177	167
2	8	22	19
2	9	27	27
2	10	43	41
2	11	43	39
3	2	104	105
3	3	118	104
3	4	54	49
3	5	89	87
3	6	109	96
3	7	17	13
3	8	40	36
3	9	38	38
3	10	20	13
4	0	42	36
4	1	13	14
4	2	39	38
4	3	54	48
4	4	20	16
4	5	20	21
4	6	19	11
4	8	27	28
5	0	123	116
5	1	52	49
5	2	193	190
5	4	30	26
5	5	38	36
5	6	144	140
5	8	91	93
6	0	185	188
6	1	11	5
6	2	88	86
6	3	20	13
6	4	231	232
6	5	45	49
6	6	123	123
6	7	13	14
6	8	76	75
6	9	14	11
6	10	75	74
7	0	100	104
7	1	46	47
7	2	133	132
7	3	11	11
7	5	75	75
7	6	93	97
7	7	24	27
7	8	70	68
7	9	19	16
7	10	17	15
8	0	38	39
8	1	68	70
8	2	19	11
8	4	19	21
8	5	36	41
8	6	20	24
8	8	23	21
8	9	16	19
8	10	21	17
9	0	36	35
9	1	40	42
9	2	80	77
9	3	129	131
9	5	125	124
9	6	75	70
9	7	20	18
9	8	31	28
9	9	43	42
10	0	51	51
10	1	153	154
10	2	30	31
10	3	150	145
10	4	77	74
10	5	55	57
10	7	95	93
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11	0	53	54
11	1	45	44
11	2	17	19
11	3	64	67
11	4	47	47
11	5	85	84
11	6	24	27
11	9	24	24
12	1	36	36
12	2	31	29
12	4	12	5
12	6	17	17
12	7	27	25
13	0	72	70
13	1	28	31
13	2	85	84
13	3	90	92
13	4	21	17
13	5	69	73
13	6	27	27
13	8	16	16
13	9	58	54
14	0	82	82
14	1	119	119
14	3	49	47
14	4	85	85
14	5	34	31
14	6	28	26
14	7	60	61
14	8	19	20
15	0	15	18
15	2	34	30
15	3	30	27
15	4	24	25
15	8	19	14
16	0	51	51
16	1	26	28
16	3	23	19
16	4	22	19
16	8	25	24
17	0	75	77
17	1	15	14
17	2	94	89
17	6	58	43
18	0	73	74
18	1	17	17
18	2	34	32
18	3	20	17
18	4	71	72
18	6	30	26
18	7	15	9
19	0	39	39
19	2	29	29
20	1	48	40
20	3	23	21
20	5	24	25
21	1	20	17
21	2	21	16
21	3	37	35
21	5	39	34
22	1	52	47
22	3	43	40
H= 6			
0	0	74	65
0	2	251	239
0	4	295	287
0	6	85	85
0	8	103	105
0	10	33	32
1	0	200	184
1	1	55	48
1	2	158	143
1	3	32	38
1	4	89	84
1	5	30	30
1	6	152	149
1	7	69	67
1	8	25	21
1	9	31	34
1	10	40	36
2	0	69	62
2	1	31	30
2	2	14	6
2	3	120	114
2	4	11	6
2	5	19	17
2	6	14	7
2	7	41	40
2	8	21	23
3	0	126	125
3	1	94	91
3	2	100	97
3	3	136	132
3	5	63	62
3	6	141	142
3	7	49	49
3	8	25	27
3	9	38	34
3	10	45	38
4	0	18	14
4	1	263	245
4	2	118	110
4	3	38	41
4	4	29	26
4	5	186	185
4	6	25	21
4	7	111	108
4	8	60	57
4	9	26	23
5	0	12	18
5	1	64	61
5	2	78	70
5	3	180	181
5	4	42	44
5	5	52	50
5	6	23	24
5	7	73	73
5	9	43	46
6	0	97	93
6	1	11	14
6	2	67	68
6	4	48	50
6	5	36	36
6	6	42	47
6	7	15	13
6	8	17	22
7	0	65	64
7	1	33	34
7	2	33	31
7	3	152	153
7	4	38	39
7	5	72	71
7	6	39	34
7	7	88	89
7	9	59	62
8	0	42	40
8	1	100	94
8	2	79	83
8	4	120	121
8	5	156	155
8	6	26	26
8	7	93	95
8	8	58	58
8	9	25	20
8	10	23	21
9	0	124	122
9	1	63	65
9	2	127	128
9	3	70	78
9	4	22	22
9	6	77	75
9	8	19	23
9	10	25	24
10	0	21	24
10	1	31	29
10	2	45	47
10	4	34	38
10	5	25	26
10	6	15	16
10	7	16	13
11	0	139	140
11	2	71	72
11	4	97	98
11	5	31	33
11	6	102	103
11	7	19	20
12	0	26	28
12	1	51	50
12	2	123	121
12	3	74	75
12	4	138	140
12	5	14	17
12	6	24	23
12	8	64	66
13	0	92	98
13	1	69	72
13	2	54	52
13	3	17	14
13	4	41	39
13	5	50	52
13	6	40	42
13	7	15	12
13	8	16	15
13	9	29	30
14	0	24	21
14	1	27	28
14	3	52	54
14	4	26	27
14	5	15	16
14	8	23	25
15	0	45	44
15	1	55	60
15	2	15	12
15	3	90	89
15	4	38	43
15	5	22	26
15	6	37	35
15	7	31	32
16	0	15	14
16	1	105	107
16	2	36	34
16	5	68	67
16	7	43	38
17	0	20	18
17	1	21	15
17	2	36	37
17	3	46	44
17	4	20	17
18	0	32	32
18	2	38	39
18	5	29	25
19	0	42	40
19	1	15	13
19	3	52	47
19	5	20	19
19	6	26	24
20	1	20	18
20	2	25	25
20	4	42	41
20	5	43	42
21	0	25	27
21	1	15	14
21	2	23	26
21	3	16	11
22	2	22	22
23	0	32	28
23	2	22	18
H= 7			
0	0	84	67
0	6	52	47
0	8	34	35
1	1	136	133
1	2	85	71
1	3	116	106
1	4	32	26
1	6	13	10
1	7	56	52
1	9	21	24
2	0	32	27
2	1	37	43
2	2	36	41
2	3	75	69
2	4	51	48
2	5	62	64
2	6	67	65
2	7	14	16
2	8	18	19
2	9	30	32
3	0	59	56
3	1	45	46
3	2	49	46
3	3	72	66
3	4	77	80
3	5	15	12
3	6	29	23
3	7	25	21
3	10	31	32
4	0	58	44
4	1	14	7
4	2	10	7
4	4	36	38
4	5	40	38
4	6	22	16
4	8	19	21
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5	1	52	51
5	2	60	55
5	3	41	36
5	4	56	53
5	6	52	47
5	7	25	26
5	8	18	21
5	10	28	27
6	0	59	60
6	1	59	51
6	2	122	123
6	4	36	38
6	5	50	55
6	6	63	56
6	8	47	47
7	0	15	12
7	2	57	55
7	3	34	29
7	4	37	36
7	6	13	9
7	7	30	31
7	8	21	23
7	9	21	24
8	1	37	33
8	4	11	11
8	6	22	23
8	7	15	18
9	0	43	46
9	1	84	83
9	2	26	29
9	3	12	8
9	4	68	68
9	5	14	18
10	0	46	45
10	2	41	38
10	3	50	49
10	5	81	79
10	6	20	17
10	7	13	11
10	9	32	31
11	0	29	29
11	1	53	51
11	2	42	43
11	3	44	49
11	6	31	31
11	7	33	29

Table I. (continued)

K	L	FO	FC
12	0	38	40
12	1	18	21
12	2	18	18
12	3	32	28
12	5	36	43
13	0	44	44
13	1	53	52
13	2	12	18
13	3	38	35
13	4	17	15
13	5	19	17
13	7	22	17
14	1	24	26
14	2	22	19
14	3	45	45
14	6	19	23
14	8	19	20
15	1	27	27
15	3	15	19
15	4	39	37
15	6	25	26
16	0	25	26
16	2	17	17
17	0	33	31
17	1	14	15
17	4	38	41
17	6	22	19
18	0	17	18
18	1	27	25
18	2	23	20
18	5	21	23
18	6	16	15
19	1	16	10
19	2	18	18
19	4	15	16
20	1	20	20
20	3	16	10
21	1	24	21
22	0	19	14
22	3	17	13
	H= 8		
0	0	21	40
0	2	79	69
0	4	84	77
0	6	63	67
1	1	55	40
1	2	39	36
1	3	69	68
1	5	13	7
1	6	18	14
1	7	15	18
1	8	24	26
1	9	22	26
2	0	52	51

K	L	FO	FC
2	1	141	125
2	2	66	59
2	3	46	42
2	5	11	7
3	0	30	39
3	1	39	29
3	2	146	124
3	3	38	37
3	4	27	22
3	5	32	30
3	7	28	25
3	8	23	21
4	0	66	61
4	1	20	20
4	2	16	14
4	3	30	30
4	4	38	34
4	5	22	17
4	6	38	36
5	0	22	17
5	1	121	111
5	2	40	35
5	3	36	36
5	4	13	13
5	5	26	21
5	8	23	23
5	9	15	15
5	10	22	17
6	0	24	21
6	1	87	74
6	2	47	44
6	3	38	33
6	6	21	24
7	0	37	37
7	2	35	35
7	3	29	29
7	4	31	31
7	5	44	46
7	7	40	40
7	9	15	17
8	0	23	22
8	1	72	62
8	2	47	45
8	5	26	29
8	6	14	10
8	7	19	18
9	0	16	12
9	1	30	31
9	2	36	37
9	4	17	15
9	5	19	16
10	0	45	44
10	1	29	27
10	2	12	13
10	3	27	28
11	0	15	16

K	L	FO	FC
11	1	14	13
11	4	26	25
11	5	13	10
11	8	23	26
12	0	19	14
12	1	22	19
12	3	39	41
12	4	23	25
12	6	52	50
13	1	34	39
13	2	25	24
13	3	36	36
14	0	26	28
14	1	43	44
14	3	20	22
14	6	21	22
15	0	22	21
15	2	25	21
15	5	19	18
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16	2	15	20
16	4	16	18
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16	6	15	15
17	1	34	32
18	1	25	25
18	3	16	14
19	5	15	17
20	1	19	13
	H= 9		
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0	2	130	132
0	4	37	29
1	0	94	83
1	1	70	69
1	3	95	89
1	4	50	49
1	5	76	69
1	6	48	45
1	7	19	17
1	8	20	14
1	9	45	46
2	0	68	63
2	1	78	80
2	2	38	30
2	3	64	71
2	4	47	46
2	5	21	16
2	6	31	30
2	7	52	54
2	8	29	26
2	9	16	14

K	L	FO	FC
2	10	21	20
3	1	27	29
3	2	52	53
3	3	68	69
3	4	29	28
3	5	52	50
3	6	40	39
3	7	22	23
3	8	28	27
3	9	26	23
4	0	27	25
4	1	67	67
4	3	37	37
4	4	40	42
4	5	50	51
4	6	15	12
4	7	19	15
5	0	70	66
5	1	59	61
5	2	134	132
5	4	18	15
5	5	25	20
5	6	45	43
5	8	42	43
6	0	143	138
6	1	13	12
6	3	16	17
6	4	142	139
6	5	12	14
6	6	42	41
6	7	14	12
6	8	43	41
7	0	67	64
7	1	38	39
7	2	69	68
7	5	22	28
7	6	46	46
7	7	19	21
7	8	16	14
8	0	37	36
8	1	82	75
8	2	43	44
8	3	14	11
8	4	14	13
8	5	49	50
8	6	27	27
8	7	27	24
9	1	22	21
9	2	49	49
9	3	77	73
9	4	44	43
9	5	23	24
9	8	14	11
9	9	34	33
10	0	61	59
10	1	97	96

K	L	FO	FC
10	3	49	45
10	5	18	20
10	7	47	45
10	8	24	23
11	0	59	60
11	1	13	8
11	3	65	63
11	4	15	15
11	5	47	47
11	6	19	18
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13	1	46	46
13	2	29	29
13	3	14	16
13	4	15	18
13	5	52	50
13	6	24	22
13	8	24	23
14	0	30	28
14	1	36	34
14	2	29	27
14	3	28	28
14	4	30	29
14	6	27	29
14	7	28	26
15	1	25	21
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19	2	16	13
20	0	18	15
20	1	35	34
20	3	17	14
21	3	27	22
22	1	25	22
	H= 10		
0	0	98	94
0	2	169	169
0	4	142	140
0	6	104	101

K	L	FO	FC
1	0	187	179
1	1	97	96
1	2	82	82
1	3	57	56
1	4	49	52
1	5	33	30
1	6	59	62
1	9	27	23
2	0	97	92
2	1	22	23
2	2	33	32
2	3	65	63
2	4	20	17
2	5	45	44
2	9	18	15
3	0	75	73
3	1	96	93
3	2	127	125
3	3	126	126
3	4	28	28
3	7	42	38
3	8	17	20
3	9	28	29
4	0	45	39
4	1	212	218
4	2	81	80
4	3	29	27
4	4	67	68
4	5	74	76
4	6	15	13
4	7	48	50
4	8	25	23
4	9	19	21
5	0	67	63
5	1	15	7
5	2	47	46
5	3	110	106
5	4	48	45
5	5	32	27
5	6	16	14
5	7	44	40
5	8	25	23
5	9	44	43
6	0	141	137
6	1	33	30
6	2	54	53
6	3	17	9
6	4	31	32
6	5	14	9
6	6	46	44
6	7	27	23
7	0	90	88
7	1	24	19
7	2	21	21
7	3	127	129
7	4	61	58

K	L	FO	FC
7	5	39	40
7	7	34	33
7	9	42	39
8	0	51	52
8	1	156	157
8	2	74	73
8	3	15	15
8	4	49	47
8	5	41	43
8	6	22	20
8	7	23	25
8	8	41	40
8	9	19	18
9	0	20	17
9	1	81	78
9	2	56	52
9	3	29	26
9	4	18	16
9	6	15	19
9	7	38	40
9	8	21	16
10	0	36	35
10	1	52	51
10	2	47	48
10	3	72	73
10	4	16	16
10	5	25	25
10	8	20	22
11	0	124	127
11	1	50	51
11	2	79	78
11	3	21	20
11	4	34	38
11	5	34	31
11	6	65	65
12	0	38	35
12	1	16	11
12	2	92	92
12	4	69	71
12	6	14	14
12	7	21	18
12	8	55	52
13	0	41	42
13	1	28	27
13	2	18	14
13	4	26	24
13	5	14	17
13	6	34	33
14	0	48	47
14	3	26	24
14	4	22	18
14	5	49	47
14	7	19	13
15	0	24	24
15	1	29	27
15	2	47	46

K	L	FO	FC
15	3	77	75
15	5	15	11
16	1	69	65
16	2	30	24
16	4	25	27
16	5	47	44
17	0	14	8
17	2	16	19
17	3	24	21
17	4	35	31
18	0	23	24
18	1	31	28
18	2	24	17
19	0	27	23
19	1	17	19
19	2	21	20
19	3	34	35
19	4	22	18
20	0	24	19
20	1	29	28
20	2	17	13
21	1	29	23
	H= 11		
0	0	143	140
0	2	17	19
0	4	76	78
0	6	26	28
0	8	46	42
1	0	12	7
1	1	91	95
1	2	93	91
1	3	119	117
1	4	60	59
1	5	21	19
1	7	68	67
1	9	29	25
2	0	48	38
2	1	84	85
2	2	107	110
2	3	88	86
2	4	35	35
2	5	88	87
2	6	35	32
2	7	16	14
2	8	37	37
2	9	33	36
3	0	115	115
3	1	126	124
3	2	87	82
3	3	28	33
3	4	49	45
3	5	33	33
3	6	37	37
3	7	25	23

Table I. (continued)

K	L	FO	FC
4	0	72	72
4	1	108	103
4	2	16	12
4	3	78	79
4	4	30	26
4	7	36	34
5	0	114	116
5	1	30	26
5	2	18	14
5	3	62	62
5	4	102	101
5	5	31	36
5	6	52	51
5	7	30	29
5	8	15	18
5	9	20	17
6	0	78	72
6	1	35	31
6	2	165	167
6	4	44	45
6	6	61	63
6	7	15	12
6	8	65	64
7	0	78	75
7	1	19	14
7	2	32	32
7	3	68	68
7	4	49	48
7	5	14	15
7	6	21	18
7	7	21	20
7	8	17	14
8	0	58	57
8	1	73	72
8	2	19	16
8	3	56	53
8	4	39	36
8	8	20	17
9	0	75	72
9	1	87	92
9	2	48	46
9	3	55	57
9	4	33	32
9	5	20	18
9	6	35	34
9	7	45	47
10	0	35	35
10	1	71	69
10	2	48	47
10	3	35	35
10	4	14	19
10	5	74	75
10	6	33	30
10	7	21	19
11	0	22	20
11	1	41	38

K	L	FO	FC
11	2	59	59
11	3	39	38
11	4	15	14
11	6	23	21
11	7	43	43
12	0	70	69
12	1	38	38
12	2	14	9
12	4	36	37
12	6	14	12
13	1	49	51
13	2	31	29
13	3	59	59
13	4	50	48
13	5	23	19
13	6	23	24
13	7	37	37
14	1	24	24
14	2	49	48
14	3	47	48
14	4	28	29
14	5	37	37
14	6	23	22
15	0	40	39
15	1	34	32
15	2	36	32
15	5	32	27
15	6	21	21
16	1	32	31
16	2	23	21
16	3	31	38
17	0	44	44
17	4	46	46
18	0	16	17
18	1	34	31
18	2	52	51
19	2	15	6
19	3	22	18
21	0	17	12
	H= 12		
0	0	109	113
0	2	74	75
0	4	35	38
0	6	39	41
0	8	26	28
1	0	14	12
1	1	17	18
1	2	53	54
1	3	63	61
1	4	31	28
1	6	19	18
1	7	32	33
2	0	15	8
2	1	75	75

K	L	FO	FC
2	2	43	42
2	4	46	47
2	5	31	34
2	6	17	19
3	0	76	70
3	1	39	37
3	2	13	15
3	3	27	28
3	4	40	40
3	5	40	39
3	6	20	20
3	7	17	16
3	8	35	40
4	0	17	16
4	2	18	16
4	3	66	66
4	5	25	24
4	6	38	40
5	0	52	51
5	1	67	70
5	2	43	40
5	3	27	27
5	5	24	25
5	6	16	18
5	7	30	31
6	0	40	37
6	1	11	2
6	2	52	52
6	4	37	36
6	8	23	20
7	0	32	30
7	1	53	52
7	2	39	38
7	3	34	35
7	4	16	13
7	5	29	28
7	7	38	42
8	0	54	52
8	2	43	45
8	3	33	33
8	5	17	16
8	6	32	34
8	7	25	25
8	8	20	20
9	0	52	51
9	1	17	13
9	2	12	2
9	3	15	16
9	4	32	33
9	5	16	15
9	6	27	26
10	0	19	22
10	1	56	56
10	2	13	6
10	4	24	22
10	5	17	16

K	L	FO	FC
11	0	20	22
11	2	21	19
11	3	20	19
11	4	32	31
12	0	48	48
12	2	49	48
12	5	28	27
12	6	38	38
12	7	16	14
13	1	15	15
13	2	24	23
13	3	33	31
13	4	15	15
14	1	23	23
14	3	18	17
15	0	19	17
15	1	33	35
15	5	17	18
16	3	32	31
16	5	20	23
17	0	19	20
17	1	30	26
17	2	17	14
18	0	24	20
19	1	15	15
20	0	16	13
	H= 13		
0	6	26	26
1	3	38	39
1	4	12	11
2	2	14	13
2	3	14	17
3	4	14	18
3	5	21	28
4	2	21	21
5	2	38	39
5	3	18	21
6	4	31	31
7	3	19	19
7	4	13	14
8	0	19	21
8	1	19	20
8	3	17	15
8	4	19	18
9	0	13	15
9	1	17	15
11	1	13	10
11	3	15	14
12	1	14	13
13	4	14	9
16	0	19	12

K	L	FO	FC
	H= 14		
0	0	67	61
0	2	76	79
0	4	78	71
0	8	27	29
1	0	77	72
1	1	77	72
1	2	52	53
1	3	16	14
1	4	35	36
1	5	26	24
1	6	36	36
2	0	41	37
2	1	18	13
2	2	37	32
2	3	21	24
2	5	22	20
2	6	19	23
3	1	36	32
3	2	47	47
3	3	56	57
3	6	31	31
3	7	24	23
4	0	20	11
4	1	109	107
4	3	34	36
4	4	34	34
4	5	31	34
4	7	31	36
5	0	63	64
5	1	26	23
5	2	21	28
5	3	49	50
5	5	27	29
6	0	88	76
6	1	13	14
6	2	22	20
6	6	21	25
7	0	26	27
7	1	19	9
7	2	16	15
7	3	51	52
7	5	20	22
8	0	26	26
8	1	71	72
8	2	20	20
8	4	39	37
8	5	28	29
8	6	17	11
8	7	31	29
9	1	31	32
9	2	39	37
9	4	15	13
9	6	22	22
9	7	16	20

K	L	FO	FC
10	2	41	40
10	3	34	36
10	6	19	16
11	0	36	37
11	1	21	21
11	2	45	42
11	4	18	21
11	6	26	26
12	0	20	22
12	1	15	12
12	2	45	45
12	3	14	12
12	4	38	38
13	0	35	31
13	1	24	22
13	4	16	19
13	5	25	24
14	0	25	28
14	3	23	25
14	4	15	7
14	5	19	18
15	1	18	19
15	2	15	13
15	3	34	36
16	0	16	9
16	1	30	29
17	2	20	17
18	0	20	20
	H= 15		
0	0	16	18
0	4	66	69
0	6	51	52
1	1	29	25
1	2	65	69
1	3	58	57
1	4	52	54
1	5	14	6
1	6	20	17
1	7	40	42
2	0	23	24
2	1	53	51
2	2	63	64
2	3	31	30
2	4	21	19
2	5	66	69
2	6	28	22
2	7	22	25
3	0	48	48
3	1	57	59
3	2	105	110
3	5	46	49
3	6	44	46
3	7	31	34
4	0	36	42

K	L	FO	FC
4	1	69	69
4	2	16	14
4	3	63	64
4	4	34	35
4	6	20	22
4	7	40	44
5	0	22	25
5	1	19	14
5	2	14	9
5	3	18	17
5	4	45	44
5	5	31	31
5	6	39	38
6	0	93	84
6	2	65	66
6	3	13	5
6	4	31	34
6	6	35	36
7	0	44	45
7	1	38	41
7	2	14	10
7	3	48	50
7	4	36	32
7	5	46	47
7	6	21	22
8	0	64	65
8	1	48	49
8	2	26	24
8	3	68	67
8	4	37	37
9	0	35	35
9	1	34	35
9	2	48	49
9	3	28	26
9	5	18	18
9	6	23	24
10	0	31	30
10	1	24	26
10	2	24	23
10	3	21	21
10	4	14	11
10	5	52	53
10	6	27	26
11	1	37	33
11	2	55	52
11	3	25	26
11	4	36	34
12	0	29	31
12	2	18	14
12	4	44	47
12	5	16	6
13	1	23	16
13	2	24	23
13	3	34	35
13	4	31	31
14	2	33	35

K	L	FO	FC
14	3	23	28
14	4	29	29
15	0	19	18
15	1	48	48
15	2	25	28
16	1	19	16
17	0	19	18
	H= 16		
0	2	51	58
0	4	37	35
0	6	63	67
1	0	15	17
1	1	39	41
1	2	32	35
1	3	78	77
1	4	37	38
1	5	33	31
2	1	87	85
2	2	21	21
2	3	31	28
2	4	37	39
2	5	41	43
3	1	19	16
3	2	35	31
3	3	29	28
3	4	32	34
3	5	42	44
3	6	37	41
4	0	41	38
4	1	22	24
4	3	46	58
4	4	18	12
4	5	39	48
4	6	28	38
5	0	62	65
5	1	43	48
5	2	54	56
5	3	32	37
5	5	20	18
5	6	37	42
6	0	41	42
6	2	58	61
6	4	55	59
7	0	38	28
7	1	33	37
7	2	41	39
7	3	18	22
7	6	23	17
8	0	15	13
8	1	15	17
8	2	25	25
8	3	25	28
8	5	21	21
9	0	25	27

Table I. (concluded)

K	L	FO	FC
9	1	22	22
9	2	30	28
9	3	38	39
9	4	35	33
9	5	35	38
10	1	65	69
10	3	26	20
10	4	31	31
10	5	31	32
11	0	24	20
11	1	16	8
11	2	24	27
11	3	30	29
11	4	31	33
12	0	30	32
12	1	25	23
12	2	18	10
13	2	26	28
13	3	41	44
14	1	36	35
14	3	22	25
15	1	17	17
16	0	17	18
	H= 17		
0	2	61	67
0	6	28	38
1	0	61	57
1	1	39	36
1	2	17	16
1	3	16	17
1	4	17	20
1	5	23	27
1	6	18	16
2	0	36	32
2	1	19	21
2	3	43	43
2	4	17	15
3	0	29	27
3	2	35	35
3	3	18	20
3	4	28	30
4	0	14	10
4	1	50	52
4	2	16	13
4	5	25	27
5	1	21	19
5	2	43	43
5	3	15	8
5	4	22	18
6	0	46	46
6	2	28	27
6	3	18	16
6	4	24	26
7	0	19	21
7	1	37	38
7	2	24	25
7	4	28	18
8	1	34	35
8	2	15	18
8	5	20	20
9	0	15	11
9	1	18	15
9	4	18	17
10	0	18	18
10	1	16	11
10	2	16	15
10	3	32	32
11	0	46	47
12	2	38	33
13	0	23	19
13	2	18	28
14	0	24	23
	H= 18		
3	2	15	13
5	0	19	22
	H= 19		
0	0	43	46
0	2	17	23
0	4	29	30
1	2	24	29
3	0	17	15
3	1	22	24
4	0	23	23
4	1	25	28
4	3	38	42
5	0	16	16
5	1	20	22
8	0	25	29
8	1	19	23
9	1	20	20
9	2	16	18
	H= 20		
0	0	25	29
0	2	23	28
1	2	19	23
1	3	35	38
2	0	21	24
2	1	68	68
2	2	18	20
2	3	28	31
3	0	42	43
3	1	22	20
3	2	28	29
4	0	19	8
4	2	17	12
5	0	45	46
5	2	42	47
6	0	43	44
6	2	18	24
7	0	25	26
	H= 21		
1	0	47	53
1	1	23	24
2	0	16	14
3	0	33	35

Table J. Observed (FO) and Calculated (FC) Structure Factors for $Cu(DapsaH)\cdot CH_3CN$

K	L	FO	FC
	H=-13		
0	4	28	23
1	2	26	24
	H=-12		
0	4	24	24
2	1	23	18
6	3	27	27
	H=-11		
0	4	42	35
0	6	28	25
1	2	25	24
2	1	31	30
2	3	25	24
6	3	32	31
	H=-10		
0	6	30	29
2	1	39	38
3	2	31	36
4	1	25	21
4	6	27	27
5	4	29	23
5	5	31	25
6	1	42	41
6	1	28	28
7	2	37	34
7	4	29	31
8	1	37	37
8	2	32	24
10	1	29	30
10	3	26	26
	H=-9		
0	2	29	29
0	6	38	40
1	1	31	27
1	2	40	42
1	5	25	26
1	7	25	19
2	1	48	48
2	5	34	32
3	1	21	14
3	2	61	53
3	3	32	34
3	4	24	23
4	1	31	31
4	2	22	21
4	6	35	33
5	5	26	21
6	1	31	30
7	1	30	22
7	2	30	33
8	1	24	27
8	6	29	22
9	1	26	20
9	2	25	21
9	5	25	18
10	1	30	31
10	5	26	21
11	2	29	26
13	1	25	16
	H=-8		
0	4	60	61
0	6	35	33
1	1	19	2
1	2	35	39
1	4	32	36
1	5	28	28
2	1	45	44
2	3	63	62
2	4	22	2
2	5	35	38
3	1	39	36
3	2	47	50
4	1	31	31
4	6	34	34
5	2	24	26
5	5	24	22
6	1	27	29
6	3	27	27
6	4	26	27
7	1	23	18
7	2	37	35
8	1	21	27
8	6	28	26
9	1	24	23
9	3	23	18
10	1	31	31
12	1	27	24
14	1	23	20
15	2	24	25
	H=-7		
0	4	34	28
1	2	30	33
1	4	28	31
2	1	30	29
2	3	64	68
2	5	28	32
3	1	49	51
3	2	53	55
3	4	27	30
4	3	23	26
4	4	31	29
5	1	29	23
5	2	19	25
5	4	25	30
5	5	40	40
6	1	43	43
6	2	26	23
6	3	48	48
6	4	22	18
7	1	31	30
7	2	43	44
7	4	41	39
8	1	36	38
8	6	28	28
9	1	38	37
9	5	26	26
10	1	26	25
11	2	23	27
12	1	31	30
13	1	23	24
14	1	24	21
	H=-6		
0	2	30	35
0	4	31	30
0	6	23	16
0	8	26	21
1	1	57	51
1	2	49	52
1	4	26	27
2	3	80	80
2	5	36	31
3	1	20	12
3	2	67	69
3	4	30	31
3	7	24	19
4	4	30	31
5	1	33	18
5	2	24	23
5	4	27	28
5	5	30	32
6	1	19	27
6	3	52	56
6	5	32	30
7	1	22	15
7	2	67	66
7	4	42	44
8	1	28	25
8	2	39	43
8	3	30	30
8	4	27	26
8	6	27	30
9	1	52	51
9	5	39	36
9	7	32	28
10	1	29	28
11	2	27	26
11	4	44	47
12	1	32	32
12	2	22	16
12	3	32	28
12	6	28	21
13	1	38	38
13	5	27	24
15	2	25	23
19	2	25	28
	H=-5		
0	8	30	30
1	1	47	41
1	2	38	42
1	4	36	37
1	5	23	23
1	7	28	31
2	1	31	35
2	3	91	93
2	5	37	40
3	1	45	43
3	2	85	87
3	4	31	32
3	7	26	21
4	2	25	27
4	4	30	25
4	6	26	24
5	1	31	30
5	4	22	19
5	5	37	35
6	1	19	17
6	2	29	27
6	3	67	67
6	5	22	22
7	2	81	80
7	4	50	47
8	2	24	28
8	3	25	31
8	4	41	41
8	6	30	29
9	1	35	32
9	5	26	25
9	7	24	22
10	2	25	33
10	3	41	44
10	4	25	26
11	2	26	27
11	3	25	22
11	4	37	37
12	2	51	49
12	3	36	39
12	6	27	22
13	1	63	62
13	5	28	20
14	2	46	50
15	4	25	23
16	3	35	30
17	1	30	25
	H=-4		
0	2	58	52
0	4	31	29
0	8	35	26
1	1	40	43
1	2	44	53
1	4	42	39
1	5	22	25
1	7	31	28
2	1	41	42
2	3	128	130
2	5	33	32
3	1	66	68
3	2	96	92
3	3	35	39
3	4	49	53
3	7	28	26
4	2	65	64
4	3	27	23
4	4	52	51
4	6	31	23
4	8	27	27
5	1	34	38
5	2	45	45
5	3	28	16
5	5	29	24
5	7	27	26
6	3	74	75
6	5	24	25
7	1	54	52
7	2	39	40
7	4	49	50
8	1	24	26
8	2	62	65
8	3	30	29
8	4	34	29
8	6	29	26
8	8	28	18
9	1	45	48
9	2	49	49
10	2	27	25
10	3	30	32
11	1	36	30
11	2	27	34
11	4	32	32
12	2	26	30
12	3	27	32
12	6	26	25
13	1	48	46
14	2	35	37
14	3	24	25
15	2	29	28
16	1	28	27
16	3	37	43
18	2	25	23
	H=-3		
0	2	76	75
0	4	45	42
0	8	29	25
1	2	41	44
1	3	36	36
1	4	64	64
1	5	33	29
1	7	26	27
2	3	157	157
2	4	35	28
2	5	28	35
3	2	75	73
3	3	28	23
3	4	57	58
3	7	34	32
4	2	68	70
4	3	20	21
4	4	35	35
4	6	23	24
4	8	25	23
5	2	42	38
5	3	29	24
5	4	24	29
5	5	30	31
6	3	43	49
6	4	30	28
6	5	30	30
7	1	45	42
7	2	49	51
7	3	48	39
7	4	31	34
7	7	25	20
8	1	27	22
8	2	70	73
8	3	22	21
8	4	48	48
8	6	24	17
8	8	25	24
9	1	114	112
9	2	23	29
9	5	27	27
9	7	24	26
10	1	44	40
10	3	23	27
11	2	44	44
11	4	49	51
12	1	41	40
12	3	32	35
12	4	27	28
13	1	32	37
13	7	28	26
14	3	37	38
15	2	31	34
15	4	31	33
16	1	34	36
17	1	28	23
17	5	24	17
	H=-2		
0	4	22	26
0	6	26	21
0	8	26	26
1	1	29	29
1	2	55	53
1	3	28	25
1	4	49	51
1	5	27	25
2	1	26	16
2	2	49	51
2	3	70	74
2	4	36	33
2	5	39	41
3	1	137	134
3	2	72	74
3	3	39	42
3	4	54	55
3	5	22	16
3	7	27	24
4	1	89	85
4	2	56	59
4	3	31	35
4	5	31	31
4	6	30	24
4	8	30	26
5	1	113	104
5	3	23	21
5	4	40	41
5	5	47	53
6	1	69	66
6	3	34	38
6	4	26	25
6	5	41	42
7	2	82	84
7	3	26	26
7	4	70	70
7	7	26	25
8	3	37	38
8	4	20	24
8	5	22	25
8	6	44	45
8	8	28	21
9	1	57	57
9	3	21	19
9	5	31	35
9	7	38	39
10	1	31	34
10	3	42	42
10	5	29	33
10	6	27	25
11	2	43	42
11	4	54	54
12	1	47	46
12	6	24	22
13	1	42	43
13	4	22	28
14	2	33	35
14	3	27	28
15	2	23	30
15	4	38	34
16	1	32	33
17	1	29	23
	H=-1		
0	2	30	45
0	6	53	52
1	1	72	81
1	2	69	78
1	4	29	30
1	5	30	35
2	1	30	39
2	5	61	62
3	1	63	60
3	2	72	67
3	4	40	43
3	6	35	34
3	7	37	35
4	1	47	49
4	2	75	71
4	5	49	49
4	6	57	60
5	1	92	92
5	2	44	47
5	7	33	32
6	1	99	93
6	2	78	64
6	3	46	50
6	5	75	74
7	1	28	25
7	2	65	67
7	3	32	30
7	4	55	55
7	6	29	30
8	1	25	25
8	2	52	53
8	3	56	53

Table J. (continued).

K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC	K	L	FO	FC
8	5	22	22	7	6	26	15	5	1	132	128	2	0	19	16	16	2	23	23	16	3	25	26	14	2	23	25	16	0	26	27
8	6	41	41	7	7	24	20	5	2	30	37	2	1	62	63	17	1	33	32	17	1	37	36	14	3	25	19	17	1	34	31
9	1	53	54	8	0	43	41	5	3	23	27	2	2	45	50					19	4	25	19	15	4	33	32	18	2	27	20
9	4	21	26	8	1	19	24	5	4	67	69	2	3	36	40		H=	3						16	3	27	29				
9	7	28	29	8	5	25	23	5	6	24	12	2	5	57	56						H=	4		17	1	27	29		H=	6	
10	3	38	42	9	1	41	44	5	7	36	33	3	0	47	39	0	0	168	158					17	4	25	21				
10	5	64	66	9	2	21	20	6	0	109	93	3	1	90	93	0	2	54	51	0	0	43	40					0	2	68	62
11	2	41	43	9	4	21	20	6	1	93	84	3	2	40	44	1	0	19	11	0	2	112	113		H=	5		1	0	24	22
11	4	44	42	9	7	25	21	6	2	18	13	3	4	26	30	1	1	51	56	0	6	24	27					1	1	52	42
11	6	23	13	10	0	25	26	6	3	20	28	4	0	144	130	1	2	49	56	1	0	17	13	0	0	97	97	1	3	43	41
12	1	41	41	10	1	59	61	6	4	31	28	4	1	22	28	1	3	89	84	1	1	46	44	0	2	44	48	1	4	31	28
12	3	22	21	10	3	48	50	6	5	61	57	4	2	84	83	1	4	77	76	1	2	47	49	0	8	32	27	2	0	31	34
12	6	28	26	10	4	23	24	7	0	32	26	4	3	19	5	2	1	50	52	1	3	64	63	1	0	31	28	2	1	28	23
13	1	40	40	10	5	39	40	7	1	46	47	4	6	36	41	2	2	40	44	1	4	42	39	1	1	67	69	2	3	48	47
14	2	26	23	10	6	24	17	7	2	81	81	5	0	29	31	2	3	113	114	2	2	25	23	1	2	70	74	2	5	40	36
14	3	29	31	11	2	35	40	7	4	53	53	5	1	128	124	2	5	29	26	2	3	73	71	1	3	40	38	3	1	41	41
15	2	23	26	11	3	21	24	8	0	32	33	5	2	52	54	2	7	28	22	2	5	44	45	2	0	29	27	3	2	38	33
15	4	27	28	11	4	52	51	8	1	65	63	5	3	39	35	3	1	52	50	3	0	24	23	2	1	25	23	3	3	22	23
				12	0	36	32	8	3	25	23	5	4	33	32	3	4	51	52	3	1	28	23	2	3	82	82	3	4	29	38
	H=	0		12	1	30	32	8	5	24	21	5	5	26	23	4	0	58	60	3	2	39	43	2	5	28	30	4	2	61	66
				12	3	27	25	9	1	65	65	5	6	26	30	4	1	35	34	3	3	61	65	2	7	25	28	4	8	28	28
0	2	26	25	13	1	40	43	9	2	65	63	5	7	39	34	4	2	75	80	3	4	51	57	3	1	40	34	5	0	32	26
0	6	78	76	13	7	32	25	9	3	23	24	6	2	58	60	4	4	24	32	3	6	25	23	3	2	36	36	5	1	58	62
1	1	123	136	14	0	43	40	9	7	40	33	6	3	61	63	4	6	29	29	4	0	69	67	3	3	58	61	5	4	26	29
1	2	22	31	14	2	32	32	10	0	39	38	6	4	29	32	5	0	27	26	4	2	77	76	3	4	39	43	6	0	28	27
1	3	26	34	14	3	29	32	10	1	84	83	6	5	63	64	5	1	73	73	4	3	58	57	4	0	56	58	6	3	48	48
1	4	43	44	15	4	34	33	10	2	19	20	7	2	31	30	5	2	45	49	5	1	64	71	4	2	77	75	6	5	31	27
1	5	25	19	16	0	49	48	10	3	52	54	7	4	52	52	5	3	41	39	5	2	32	29	5	0	43	34	6	7	24	17
1	6	48	51	16	1	27	21	10	5	27	29	7	6	28	23	5	4	53	52	5	3	33	35	5	1	56	54	7	0	28	28
1	7	45	53	17	1	41	40	11	0	20	18	8	0	71	68	5	5	34	39	5	4	40	45	5	2	20	20	7	1	29	27
2	0	40	37	18	0	35	36	11	1	42	44	8	1	25	23	5	7	26	22	5	7	28	26	5	3	28	25	7	2	42	43
2	1	90	92					11	2	67	67	8	2	101	96	6	1	23	15	6	0	75	69	5	4	21	26	7	4	45	44
2	3	28	33		H=	1		11	4	38	42	8	3	47	49	6	2	52	53	6	2	40	40	6	2	50	54	7	6	28	17
2	5	61	61					12	0	48	50	8	5	25	24	6	3	49	50	6	3	37	39	6	3	41	43	8	0	52	52
3	1	50	47	0	2	63	67	13	1	60	60	8	8	33	23	6	5	47	44	6	5	41	38	6	5	32	28	8	2	69	73
3	2	44	43	0	6	78	79	13	2	27	25	9	0	29	27	7	4	32	36	7	0	26	23	7	1	26	27	8	3	28	23
3	4	38	39	1	1	62	88	14	0	38	38	9	1	101	101	7	6	24	19	7	4	48	48	7	4	47	49	9	1	49	43
3	6	58	58	1	2	35	35	14	1	21	22	9	2	23	26	8	0	82	78	7	6	23	16	8	0	45	42	9	3	32	28
3	7	43	39	1	4	43	42	14	2	24	21	9	3	20	22	8	2	65	67	8	0	36	38	8	2	53	54	10	0	29	25
4	0	229	218	1	5	31	35	14	3	29	28	9	7	35	29	9	1	46	44	8	2	57	60	9	0	20	17	10	2	37	40
4	1	77	77	1	6	38	37	15	2	29	28	10	0	42	45	9	3	26	26	8	3	27	28	9	1	46	43	10	3	38	38
4	3	28	9	1	7	38	35	15	4	31	29	10	1	30	28	9	7	27	29	9	0	20	13	9	3	28	27	11	0	29	25
4	5	29	29	2	1	25	17	16	0	31	28	10	3	54	55	10	0	45	42	9	1	52	51	9	4	28	30	11	4	34	31
4	6	55	54	2	3	19	17	17	1	29	31	10	5	29	27	10	2	42	44	9	4	28	31	10	2	37	37	11	6	32	27
5	2	83	80	2	5	70	71	18	0	30	28	11	0	34	31	10	3	33	37	9	5	28	30	10	3	22	18	12	0	45	43
5	3	31	33	3	0	47	42					11	2	47	49	10	5	29	32	10	2	31	33	10	5	30	23	12	1	25	13
5	4	30	30	3	1	127	134		H=	2		11	4	37	41	11	4	34	34	10	3	27	30	11	0	34	32	12	2	38	34
5	7	29	27	3	2	67	71					12	0	26	34	12	0	28	34	10	5	37	36	11	4	47	48	12	3	26	30
6	0	53	49	3	4	30	37	0	0	70	62	12	1	20	22	12	2	37	38	11	0	23	21	12	0	46	46	13	1	37	35
6	1	118	106	3	6	35	31	0	6	48	46	12	2	41	43	12	3	35	40	11	4	39	38	12	2	28	30	14	5	24	16
6	2	26	26	4	0	186	167	1	1	41	36	13	1	42	45	12	5	24	24	12	0	47	47	13	1	44	40	15	4	24	19
6	3	33	33	4	1	102	101	1	2	119	118	14	0	24	22	13	1	22	27	12	2	25	33	13	5	30	27	17	1	25	27
6	5	60	59	4	2	29	29	1	3	28	31	14	3	43	43	13	3	28	25	12	3	32	26	14	2	26	25				
7	2	49	53	4	3	37	38	1	4	27	29	15	2	39	42	14	3	25	24	13	1	35	38	14	3	24	20		H=	7	
7	3	22	26	4	6	32	22	1	5	29	32	15	4	29	27	15	4	30	29	13	3	26	26	14	5	26	18				
7	4	28	33	5	0	176	152	1	6	23	22	16	0	25	18	16	0	29	29	13	6	24	7	15	4	29	31	0	0	23	27

Table J. (concluded).

K	L	FO	FC
0	2	48	51
1	1	27	28
1	2	22	29
1	3	39	37
2	1	23	21
2	3	44	47
2	5	33	27
3	1	24	5
3	3	33	28
3	4	30	31
4	0	66	65
4	1	31	31
4	2	53	56
5	1	37	38
5	2	27	26
5	3	47	46
6	0	33	33
6	1	22	11
6	3	43	44
6	5	28	30
6	7	24	12
7	0	28	27
7	1	23	18
7	4	46	48
7	6	26	26
8	0	66	67
8	1	21	8
8	2	52	54
9	1	41	39
10	1	28	27
10	3	23	12
10	5	26	25
11	0	25	23
11	6	25	23
12	0	32	32
12	2	32	36
13	1	29	28
17	1	25	21
18	0	27	22
	H= 8		
0	0	70	69
0	2	47	49
0	4	35	35
1	0	27	25
1	1	38	37
1	2	25	17
1	3	48	53
1	4	23	24
2	1	31	27
2	3	37	39
2	5	25	26
3	0	27	32
3	1	43	43
3	3	27	31
3	4	34	34
4	0	63	63
4	2	36	34
5	1	35	39
5	3	21	15
6	5	32	31
7	1	24	19
8	0	54	53
9	1	27	30
10	5	26	22
11	0	25	27
12	0	33	30
13	1	33	34
13	3	25	21
15	1	26	22
	H= 9		
0	0	50	52
0	2	54	54
0	4	40	44
1	0	24	26
1	1	38	41
2	1	26	8
2	5	42	39
3	0	27	28
3	1	28	32
3	2	38	38
4	0	52	52
4	3	33	39
4	4	29	27
5	0	21	18
5	1	37	34
6	5	37	29
7	0	26	26
7	2	27	28
8	0	41	39
9	1	25	34
10	5	25	27
12	0	25	17
13	1	30	27
17	1	29	24
	H= 10		
0	0	56	55
1	0	24	24
1	1	32	26
2	1	24	4
3	0	26	26
3	2	25	23
4	0	55	54
4	2	32	33
5	1	24	28
6	4	25	22
8	0	40	36
8	2	26	28
9	1	29	28
	H= 11		
0	0	50	48
1	0	32	29
3	0	28	25
3	1	24	25
4	0	37	36
4	2	26	26
5	1	24	27
8	2	29	29
9	3	26	24
	H= 12		
0	0	24	20
0	2	38	37
2	1	29	27
2	5	27	19
4	2	23	20
	H= 13		
0	2	28	27

Table K. Final Atomic Positional and Thermal Parameters for $[Cu(EIA)]_4 \cdot C_4H_9OH$.[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU1	.0937(1)	.0395(1)	-.09882(7)	4.48(7)	4.03(7)	3.62(7)	-.27(5)	1.49(5)	-.64(5)
CU2	.1675(1)	.0014(1)	-.20885(6)	5.51(7)	3.28(6)	3.00(6)	.12(5)	1.33(5)	-.07(5)
CU3	.2962(1)	.0237(1)	-.06415(6)	4.38(7)	3.99(6)	3.19(6)	-.02(5)	1.14(5)	.38(5)
CU4	.2087(1)	.2411(1)	-.14078(7)	5.12(8)	3.30(6)	4.00(7)	-.26(5)	.83(6)	-.00(5)
O11	.2025(5)	.1215(7)	-.0550(3)	5.0(4)	4.4(4)	3.0(3)	-.3(3)	1.5(3)	-.3(3)
O21	.1661(5)	-.0630(6)	-.1292(3)	5.4(4)	2.9(3)	3.5(4)	-.2(3)	1.7(3)	-.1(3)
O31	.2867(5)	.1131(7)	-.1396(4)	4.5(4)	4.3(4)	3.6(4)	-.1(3)	1.4(3)	.6(3)
O41	.1125(5)	.1396(6)	-.1868(4)	4.5(4)	3.6(3)	3.4(4)	.2(3)	.7(3)	-.1(3)
O12	-.0112(6)	-.0392(8)	-.1428(4)	4.3(4)	6.0(5)	6.2(5)	-.4(4)	1.7(4)	-1.2(4)
O22	.1691(7)	.0642(7)	-.2864(4)	9.6(6)	4.4(4)	4.0(4)	1.1(4)	3.5(4)	1.0(3)
O32	.3046(6)	-.0649(8)	.0085(4)	6.8(5)	6.2(5)	4.5(5)	.9(4)	2.4(4)	1.6(4)
O42	.3030(7)	.3442(8)	-.0994(5)	7.0(6)	4.6(5)	8.4(7)	-.8(4)	1.6(5)	-1.2(4)
N1	.0404(7)	.1282(9)	-.0487(5)	5.1(5)	4.9(5)	3.9(5)	.2(4)	1.7(4)	-.1(4)
N2	.2033(7)	-.1512(8)	-.2225(5)	7.3(6)	3.2(4)	3.4(5)	.5(4)	2.1(4)	-.4(3)
N3	.3982(6)	-.0419(9)	-.0758(4)	4.6(5)	4.8(5)	3.6(5)	-.7(4)	.8(4)	.3(4)
N4	.1159(7)	.3522(9)	-.1525(5)	6.3(6)	3.9(5)	4.6(6)	.3(4)	1.3(5)	-.0(4)

ATOM	X	Y	Z	B
C11	.1971(9)	.164(1)	.0032(6)	5.1(3)
C12	.1057(9)	.208(1)	-.0069(7)	5.5(3)
C13	-.073(1)	.204(2)	-.0100(8)	7.5(4)
C14	-.0396(9)	.124(1)	-.0521(7)	5.1(3)
C15	-.102(1)	.050(1)	-.0932(7)	5.8(3)
C16	-.0823(9)	-.024(1)	-.1345(7)	5.5(3)
C17	-.159(1)	-.095(2)	-.1746(8)	7.1(4)
C21	.1544(8)	-.186(1)	-.1345(6)	4.1(2)
C22	.2153(8)	-.231(1)	-.1683(6)	4.9(3)
C23	.269(1)	-.305(2)	-.2718(9)	8.2(4)
C24	.228(1)	-.184(1)	-.2696(7)	5.8(3)
C25	.223(1)	-.107(1)	-.3199(8)	6.4(3)
C26	.195(1)	.005(1)	-.3247(8)	6.6(3)
C27	.190(1)	.077(2)	-.386(1)	8.9(5)
C31	.3716(8)	.120(1)	-.1466(6)	4.8(3)
C32	.4166(9)	.003(1)	-.1318(6)	5.2(3)
C33	.524(1)	-.176(1)	-.0578(9)	6.9(4)
C34	.4467(9)	-.127(1)	-.0429(7)	5.0(3)
C35	.4289(9)	-.176(1)	.0084(7)	5.2(3)
C36	.3649(9)	-.144(1)	.0287(7)	5.5(3)
C37	.352(1)	-.207(2)	.0860(9)	8.3(5)

Table K. (Continued).

ATOM	X	Y	Z	B
C41	.0417(9)	.206(1)	-.2266(6)	5.0(3)
C42	.0282(9)	.310(1)	-.1891(7)	5.5(3)
C43	.044(1)	.519(2)	-.1218(8)	7.3(4)
C44	.1246(9)	.450(1)	-.1198(7)	5.4(3)
C45	.208(1)	.489(1)	-.0814(7)	6.0(3)
C46	.287(1)	.441(1)	-.0747(8)	6.6(4)
C47	.374(1)	.501(2)	-.035(1)	9.6(5)
C1B	.447(4)	.424(5)	-.216(3)	5.7(12)
C2B	.386(4)	.445(6)	-.198(3)	6.4(14)
C3B	.460(5)	.421(7)	-.164(4)	8.5(19)
O1B	.521(5)	.511(7)	-.187(3)	13.2(21)
C4B	.432(5)	.362(6)	-.264(4)	7.4(17)

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\,1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

Table L. Final Atomic Positional and Thermal Parameters for $[Ni(EIA)(CH_3OH)]_4$.[a]

Atom Name	X	Y	Z	B or β_{11}	β_{22}	β_{33}	β_{12}	β_{13}	β_{23}
Ni(1)	0.1786(1)	0.17013(5)	-0.1011(1)	0.0044(1)	0.00116(3)	0.00329(8)	0.00022(5)	0.00022(8)	-0.00006(4)
Ni(2)	0.2134(1)	0.17748(6)	-0.3308(1)	0.0045(1)	0.00100(2)	0.00368(9)	0.00013(5)	0.00046(9)	0.00020(4)
Ni(3)	0.1390(1)	0.07276(5)	-0.2477(1)	0.00456(9)	0.00098(2)	0.00380(9)	-0.00019(5)	-0.0001(1)	0.00006(4)
Ni(4)	0.3674(1)	0.10829(5)	-0.1900(1)	0.0043(1)	0.00100(2)	0.0045(1)	0.00024(5)	0.0000(1)	-0.00008(4)
O(11)	0.0978(6)	0.1517(3)	-0.2328(6)	3.0(2)					
O(21)	0.2674(6)	0.1035(3)	-0.3220(5)	2.7(1)					
O(31)	0.2226(6)	0.0915(3)	-0.1197(5)	2.7(1)					
O(41)	0.3083(5)	0.1809(3)	-0.1970(5)	2.6(1)					
O(13)	0.1640(6)	0.2528(3)	-0.1230(6)	4.2(2)					
C(18)	0.0905(13)	0.2874(7)	-0.0685(12)	6.4(4)					
C(11)	-0.0127(9)	0.1697(5)	-0.2229(8)	3.6(2)					
C(12)	-0.0561(9)	0.1560(5)	-0.1142(9)	3.7(3)					
N(1)	0.0318(8)	0.1647(4)	-0.0384(7)	3.6(2)					
C(14)	0.0123(9)	0.1646(5)	0.0579(8)	3.5(2)					
C(13)	-0.107(1)	0.1541(5)	0.092(1)	4.7(3)					
C(15)	0.0935(9)	0.1733(5)	0.1307(8)	3.7(2)					
C(16)	0.2031(9)	0.1812(5)	0.1197(9)	4.0(3)					
C(17)	0.277(1)	0.1912(5)	0.209(1)	4.9(3)					
O(12)	0.2535(6)	0.1779(3)	0.0312(6)	3.8(2)					
C(28)	0.091(1)	0.1610(6)	-0.556(1)	5.6(3)					
O(23)	0.0839(6)	0.1574(3)	-0.4444(6)	3.8(2)					
C(21)	0.307(1)	0.0894(5)	-0.4221(9)	3.8(3)					
C(22)	0.374(1)	0.1343(5)	-0.4671(9)	3.7(2)					
N(2)	0.3218(7)	0.1831(4)	-0.4411(7)	3.3(2)					
C(24)	0.354(1)	0.2278(5)	-0.4829(9)	3.8(3)					
C(23)	0.445(1)	0.2261(6)	-0.563(1)	5.1(3)					
C(25)	0.306(1)	0.2756(5)	-0.4571(9)	3.9(3)					
C(26)	0.233(1)	0.2855(5)	-0.3872(9)	3.8(2)					
C(27)	0.202(1)	0.3430(5)	-0.360(1)	5.0(3)					
O(22)	0.1819(6)	0.2531(3)	-0.3268(6)	3.8(2)					
O(33)	0.2333(6)	0.0011(3)	-0.2723(6)	3.8(2)					
C(38)	0.208(1)	-0.0510(6)	-0.242(1)	5.7(3)					
C(31)	0.205(1)	0.0529(5)	-0.0450(9)	3.6(2)					
C(32)	0.080(1)	0.0364(5)	-0.048(1)	4.1(3)					
N(3)	0.0409(8)	0.0363(4)	-0.1529(7)	3.3(2)					

Table L. (Continued).

Atom Name	X	Y	Z	B or β_{11}	β_{22}	β_{33}	β_{12}	β_{13}	β_{23}
C(34)	-0.053(1)	0.0145(5)	-0.177(1)	4.0(3)					
C(33)	-0.120(1)	-0.0129(6)	-0.094(1)	6.8(4)					
C(35)	-0.0930(9)	0.0150(5)	-0.275(1)	4.0(3)					
C(36)	-0.051(1)	0.0390(5)	-0.3633(9)	3.9(3)					
C(37)	-0.114(1)	0.0392(6)	-0.462(1)	5.5(3)					
O(32)	0.0409(6)	0.0625(3)	-0.3670(5)	3.4(2)					
O(43)	0.4293(7)	0.1231(3)	-0.0368(6)	4.1(2)					
C(48)	0.484(1)	0.0827(6)	0.020(1)	6.3(4)					
C(41)	0.3980(8)	0.2157(4)	-0.1853(9)	3.1(2)					
C(42)	0.496(1)	0.1969(4)	-0.243(1)	3.8(2)					
N(4)	0.5036(7)	0.1410(4)	-0.2388(8)	3.3(2)					
C(44)	0.590(1)	0.1157(5)	-0.266(1)	4.3(3)					
C(43)	0.692(1)	0.1466(6)	-0.299(1)	6.8(4)					
C(45)	0.596(1)	0.0594(5)	-0.268(1)	4.8(3)					
C(46)	0.520(1)	0.0262(5)	-0.241(1)	4.3(3)					
C(47)	0.541(1)	-0.0328(6)	-0.257(1)	6.0(3)					
O(42)	0.4227(6)	0.0365(3)	-0.2053(6)	3.7(2)					

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[-\beta_{11}h^2 - \beta_{22}k^2 - \beta_{33}\ell^2 - 2\beta_{12}hk - 2\beta_{13}h\ell - 2\beta_{23}k\ell\right]$$

Table M. Atomic Positional and Thermal Parameters for the Complex $Fe_2(DSALZ)_3$.[a]

ATOM	X	Y	Z	B11	B22	B33	B12	B13	B23
FE1	-.0723(1)	.3168(1)	.5637(2)	1.89(8)	3.5(1)	2.57(9)	-.0(1)	.2(1)	-.8(1)
O1	-.1591(6)	.3366(8)	.4210(8)	2.7(5)	6.3(8)	3.8(6)	-.5(5)	1.1(5)	-1.7(6)
O2	-.0232(6)	.2189(9)	.0301(9)	4.4(6)	5.1(7)	2.9(6)	.4(6)	1.3(5)	-.3(6)
O3	-.0361(5)	.4265(6)	.3648(9)	2.6(5)	2.7(5)	4.1(6)	.5(4)	-.2(5)	-1.5(6)
N1	-.1291(6)	.3335(8)	.2347(9)	2.5(6)	2.2(7)	3.2(7)	.0(5)	-.1(5)	-.8(5)
N2	-.0943(6)	.314(1)	.1548(9)	2.5(5)	3.7(7)	2.6(7)	.9(6)	-.2(4)	-.6(7)
N3	.0143(6)	.2885(8)	.2740(9)	1.4(5)	2.5(6)	2.9(7)	-.2(5)	.1(5)	-.9(5)
C11	-.219(1)	.364(1)	.393(2)	2.1(8)	5.1	5.2	-.4(9)	.8(8)	-2.5(9)
C12	-.269(1)	.379(2)	.467(2)	3.0	10.0	9.2	-.9	.7	-6.4
C13	-.331(1)	.407(2)	.443(2)	3.4	11.5	9.4	-.8	.6	-7.1
C14	-.350(1)	.422(2)	.355(3)	2.5(9)	6.6	14.3	.7(9)	2.4	-5.2
C15	-.303(1)	.408(1)	.280(2)	3.6(9)	6.2	8.5	.3	1.1	-1.9
C16	-.2360(9)	.374(1)	.307(2)	1.4(8)	4.9	6.4	.9(8)	.5(9)	-1.5
C17	-.1930(9)	.356(1)	.226(1)	2.7(8)	1.7(8)	5.6	.2(6)	.6(8)	-.4(7)
C21	-.021(1)	.286(2)	-.021(1)	3.7(9)	7.2	3.3	-.3	-.7(8)	.0
C22	.013(1)	.285(2)	-.110(1)	6.8	10.8	2.9	-1.7	.6	-1.8
C23	.014(2)	.353(2)	-.164(1)	11.4	6.2	2.6	-3.0	.6	1.8
C24	-.014(1)	.424(2)	-.140(2)	10.3	7.5	4.3	-2.7	-.8	-.4
C25	-.050(1)	.431(2)	-.053(2)	6.1	7.9	4.4	-.9	-2.3	2.6
C26	-.0524(9)	.361(1)	.006(1)	3.8(9)	3.8	3.1(9)	-.4(9)	-1.0(7)	.2(9)
C27	-.0866(9)	.373(1)	.093(1)	3.5	3.9	4.1	.4(7)	.4(8)	-.3(8)

ATOM	X	Y	Z	B
C31	.0261(7)	.4561(9)	.354(1)	2.3(3)
C32	.0415(9)	.535(1)	.395(1)	2.9(4)
C33	.1052(9)	.569(1)	.386(1)	3.5(4)
C34	.156(1)	.528(1)	.333(1)	4.5(5)
C35	.1411(9)	.452(1)	.292(1)	3.7(4)
C36	.0780(9)	.415(1)	.307(1)	2.6(3)
C37	.0675(9)	.3338(9)	.264(1)	2.7(3)
OSLV	.23300	.25000	.25000	10.00
C1SLV	.24830	.25000	.25000	10.00
C2SLV	.31700	.23700	.29000	10.00

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\ 1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

Table N. Final Atomic Positional and Thermal Parameters for $[Co(Dapo)(DapoH)]C\ell_2 \cdot 2H_2O$.[a]

ATOM	X	Y	Z	β_{11}	β_{22}	β_{33}	β_{12}	β_{13}	β_{23}
CO1	0.00000	0.00000	0.00000	.00130(3)	.0044(1)	.00217(6)	-.00012(6)	.00018(3)	.00016(9)
CL1	.19969(7)	.3594(1)	-.3559(1)	.00241(5)	.0089(2)	.0068(1)	-.00071(8)	.00032(6)	.0002(1)
OH2	-.3818(2)	-.1506(5)	.2800(3)	.0032(1)	.0156(7)	.0067(3)	-.0009(3)	.0009(2)	-.0016(4)
N2	.1212(2)	.0204(4)	.1041(3)	.0016(1)	.0076(6)	.0039(3)	-.0003(2)	.0002(1)	.0007(4)
N1	-.0071(2)	.2399(4)	.0243(3)	.0019(1)	.0054(5)	.0045(4)	-.0004(2)	.0009(2)	.0000(3)
O1	-.0469(2)	-.0505(3)	.1409(2)	.0021(1)	.0071(4)	.0028(2)	-.0009(2)	.0005(1)	-.0004(2)
C1	.0458(3)	.3211(5)	-.0545(4)	.0026(2)	.0059(6)	.0049(4)	-.0033(3)	.0010(2)	.0009(4)
C2	.1690(3)	.1193(6)	.0266(4)	.0017(2)	.0092(7)	.0045(4)	-.0006(3)	.0005(2)	.0002(4)
C3	.1025(3)	.1881(5)	-.0899(4)	.0020(2)	.0072(6)	.0034(4)	-.0011(3)	.0008(2)	-.0002(4)

ATOM	X	Y	Z	B
HC1	.078(4)	.383(8)	-.481(6)	5.00000
HC1*	.004(4)	.366(8)	-.124(7)	5.00000
HC3	.133(4)	.223(8)	-.158(6)	5.00000
HC2	.201(4)	.220(9)	.079(6)	5.00000
HC2*	.207(4)	.044(8)	-.011(6)	5.00000
HBNO	.003(5)	-.068(7)	.210(6)	5.00000

[a] **The form of the thermal ellipsoid expression is:**

$$\exp\,[-\beta_{11}h^2 - \beta_{22}k^2 - \beta_{33}\ell^2 - 2\beta_{12}hk - 2\beta_{13}h\ell - 2\beta_{23}k\ell]$$

Table O. Final Atomic Positional and Thermal Parameters for $[Cu_3(Dapo)_2(DapoH)_2]I_4 \cdot CH_3OH$.[a]

ATOM	X	Y	Z	β_{11}	β_{22}	β_{33}	β_{12}	β_{13}	β_{23}
I(1)	.4842(1)	.1457(1)	.29741(8)	.0060(1)	.00312(9)	.00270(5)	.00033(8)	.00003(5)	.00051(5)
I(2)	-.0234(1)	.3026(1)	.36494(8)	.0063(1)	.00334(8)	.00247(5)	.00027(8)	-.00048(5)	.00084(5)
I(3)	.0017(1)	.4408(1)	.12372(8)	.00417(9)	.00468(9)	.00231(4)	-.00014(8)	-.00046(5)	.00059(5)
I(4)	.3891(1)	.1425(1)	.02821(9)	.0097(2)	.0051(1)	.00267(5)	.0023(1)	-.00067(7)	-.00062(6)
CU(1)	.1821(2)	.3078(2)	.0771(1)	.0053(2)	.0027(1)	.00149(6)	-.0013(1)	-.00081(8)	.00046(8)
CU(2)	.2690(2)	.5150(2)	.1707(1)	.0055(2)	.0026(1)	.00138(6)	.0005(1)	-.00003(8)	.00015(8)
CU(3)	.4995(2)	.4027(2)	.2515(1)	.0043(2)	.0036(1)	.00130(6)	-.0000(1)	-.00031(8)	-.00019(8)
O(1)	.292(1)	.4238(9)	.0937(6)	.0040(9)	.0021(7)	.0017(4)	.0008(7)	.0002(4)	.0002(4)
N(11)	.244(1)	.627(1)	.1015(8)	.007(1)	.002(1)	.0013(4)	.0007(9)	-.0005(6)	.0001(5)
N(12)	.169(1)	.358(1)	-.0199(8)	.006(1)	.003(1)	.0016(4)	-.002(1)	-.0008(6)	.0005(6)
O(2)	.336(1)	.4189(9)	.2398(6)	.005(1)	.0028(8)	.0013(3)	-.0002(7)	-.0001(4)	-.0001(4)
N(21)	.196(1)	.578(1)	.2459(8)	.005(1)	.004(1)	.0020(5)	.001(1)	.0005(6)	.0002(6)
N(22)	.490(1)	.439(1)	.3498(8)	.006(1)	.004(1)	.0014(4)	.000(1)	.0002(6)	-.0005(6)
O(3)	.702(1)	.242(1)	.1590(8)	.007(1)	.0037(9)	.0026(5)	.0008(9)	.0001(6)	.0004(5)
N(31)	.495(1)	.346(1)	.1563(7)	.006(1)	.0023(9)	.0012(4)	.0006(9)	.0001(6)	-.0006(5)
N(32)	.664(1)	.381(1)	.2693(8)	.004(1)	.007(1)	.0014(5)	-.000(1)	-.0003(6)	-.0002(7)
O(4)	.170(1)	.032(1)	.1490(9)	.008(1)	.004(1)	.0041(6)	-.0019(9)	-.0013(7)	.0013(6)
N(41)	.237(1)	.241(1)	.1671(8)	.006(1)	.003(1)	.0018(5)	-.0005(9)	-.0014(6)	.0006(6)
N(42)	.087(1)	.181(1)	.0504(9)	.006(1)	.005(1)	.0028(6)	-.003(1)	-.0010(7)	.0014(7)

ATOM	X	Y	Z	B
C(11)	.226(2)	.578(2)	.035(1)	2.6(4)
C(12)	.301(1)	.483(1)	.0353(9)	2.2(3)
C(13)	.278(2)	.416(2)	-.027(1)	2.8(4)
C(21)	.189(2)	.494(2)	.294(1)	3.6(4)
C(22)	.295(2)	.434(2)	.304(1)	2.5(3)
C(23)	.383(2)	.493(2)	.350(1)	3.0(4)
C(31)	.579(1)	.382(1)	.1181(9)	2.1(3)
C(32)	.696(2)	.352(2)	.1477(9)	2.4(3)
C(41)	.153(2)	.195(2)	.207(1)	3.4(4)
C(42)	.091(2)	.106(2)	.168(1)	3.4(4)
C(43)	.022(2)	.142(2)	.099(1)	4.6(5)
OSOLV	.671(2)	.179(2)	.026(1)	8.0(6)
CSOLV	.740(2)	.135(2)	-.010(1)	5.7(6)
H(11)	.15100	.55500	.02500	5.00000
H(11)	.24100	.62400	0.00000	5.00000
H(12)	.37500	.50700	.03600	5.00000
H(13)	.32900	.36800	-.03200	5.00000
H(13)	.25900	.45600	-.06800	5.00000

Table O. (Continued).

ATOM	X	Y	Z	B
H(21)	.13000	.44800	.27700	5.00000
H(21)	.17400	.52000	.33600	5.00000
H(22)	.28300	.36900	.32400	5.00000
H(23)	.36300	.49500	.39600	5.00000
H(23)	.38700	.56200	.33500	5.00000
H(31)	.57500	.45600	.11500	5.00000
H(31)	.56500	.35500	.07300	5.00000
H(32)	.74700	.37200	.11600	5.00000
H(33)	.73200	.47800	.20800	5.00000
H(33)	.80700	.38500	.23000	5.00000
H(41)	.10000	.24600	.21700	5.00000
H(41)	.18800	.16900	.25000	5.00000
H(42)	.04200	.07500	.19700	5.00000
H(43)	-.03100	.19200	.10900	5.00000
H(43)	-.02000	.08200	.08000	5.00000

[a] **The form of the thermal ellipsoid expression is:**

$$\exp\left[-\beta_{11}h^2 - \beta_{22}k^2 - \beta_{33}\ell^2 - 2\beta_{12}hk - 2\beta_{13}h\ell - 2\beta_{23}k\ell\right]$$

Table P. Final Atomic Positional and Thermal Parameters for Cu_2(Dapac)(OAc).[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU(1)	.16467(4)	.35363(4)	-.09870(4)	2.44(2)	2.60(2)	2.71(2)	.02(1)	.40(1)	.34(2)
CU(2)	.11207(4)	.16866(4)	.06943(4)	2.00(2)	2.66(2)	2.70(2)	-.02(1)	.22(1)	.35(2)
O(11)	.2399(2)	.4763(2)	-.1399(3)	3.6(1)	3.2(1)	4.4(1)	-.2(1)	1.2(1)	.7(1)
O(21)	.1366(2)	.1366(3)	.2240(2)	2.9(1)	4.8(1)	2.9(1)	-.2(1)	.35(9)	.7(1)
O(31)	.0874(2)	.2195(2)	-.0826(2)	2.4(1)	2.9(1)	2.8(1)	.06(9)	.14(9)	.28(9)
O(41)	.3147(2)	.2900(3)	-.0328(3)	2.6(1)	3.9(1)	5.5(2)	-.1(1)	.5(1)	1.4(1)
O(42)	.2782(2)	.1706(3)	.0911(3)	2.3(1)	5.2(2)	3.7(1)	.2(1)	.3(1)	1.3(1)
N(11)	.0149(3)	.4178(3)	-.1412(3)	2.9(1)	3.0(1)	2.8(1)	.1(1)	.1(1)	.2(1)
N(21)	-.0484(3)	.1366(3)	.0323(3)	2.6(1)	2.8(1)	3.0(1)	-.2(1)	.2(1)	.2(1)
C(11)	.2721(5)	.6506(4)	-.2073(5)	6.4(3)	3.4(2)	5.4(3)	-1.2(2)	2.2(2)	.5(2)
C(12)	.1901(4)	.5657(3)	-.1797(4)	4.8(2)	3.1(2)	2.6(2)	-.4(2)	.9(2)	-.1(1)
C(13)	.0759(4)	.5890(4)	-.1974(4)	4.7(2)	2.6(2)	3.7(2)	.1(2)	.3(2)	.2(2)
C(14)	-.0103(4)	.5175(3)	-.1768(3)	3.5(2)	2.7(2)	3.0(2)	.2(1)	-.1(1)	-.2(1)
C(15)	-.1322(5)	.5598(4)	-.1978(5)	4.1(2)	3.6(2)	6.5(3)	1.0(2)	-.4(2)	.5(2)
C(21)	.0987(5)	.0915(6)	.3983(4)	4.9(3)	9.6(4)	3.1(2)	-.5(3)	1.0(2)	1.0(2)
C(22)	.0566(4)	.1099(4)	.2719(4)	3.4(2)	3.3(2)	3.2(2)	.2(1)	1.0(1)	.4(1)
C(23)	-.0578(4)	.0961(4)	.2191(4)	3.2(2)	3.5(2)	4.0(2)	-.1(1)	1.3(2)	.3(2)
C(24)	-.1082(3)	.1071(3)	.1025(4)	2.5(2)	2.1(1)	4.2(2)	-.1(1)	.7(1)	.0(1)
C(25)	-.2344(4)	.0799(4)	.0624(5)	2.3(2)	5.4(2)	5.7(3)	-.7(2)	.8(2)	.0(2)
C(31)	-.0738(4)	.3431(3)	-.1223(4)	2.6(2)	3.3(2)	3.4(2)	.1(1)	-.0(1)	.3(1)
C(32)	-.0325(3)	.2280(3)	-.1369(4)	2.6(2)	3.1(2)	2.8(2)	-.1(1)	-.0(1)	-.1(1)
C(33)	-.0984(4)	.1426(4)	-.0894(4)	2.8(2)	3.4(2)	3.6(2)	-.7(1)	-.2(1)	-.0(2)
C(41)	.3402(3)	.2119(3)	.0339(4)	2.2(1)	3.4(2)	3.2(2)	-.2(1)	.2(1)	-.2(1)
C(42)	.4581(4)	.1620(4)	.0483(5)	2.8(2)	5.5(2)	5.9(3)	.9(2)	1.2(2)	1.4(2)

ATOM	X	Y	Z	B
H(11)	.044(5)	.657(5)	-.219(5)	5.00000
H(21)	-.114(5)	.085(5)	.270(5)	5.00000
H(31)	-.142(5)	.362(5)	-.179(5)	5.00000
H(32)	-.087(5)	.358(5)	-.043(5)	5.00000
H(33)	-.047(5)	.213(5)	-.215(5)	5.00000
H(34)	-.176(6)	.175(4)	-.095(5)	5.00000
H(35)	-.082(5)	.070(5)	-.128(5)	5.00000

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\ 1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

Table Q. Final Atomic Positional and Thermal Parameters for $Cu_2(Dapsa)(OAc)\cdot 2CH_3CN$.[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU(1)	.04051(3)	.03045(6)	.12259(4)	3.96(3)	2.87(2)	2.78(2)	-.18(2)	.81(2)	.20(2)
O1	0.00	.1051(4)	.25	4.3(2)	2.4(2)	3.4(2)	0.00	1.0(1)	0.00
N1	.0690(2)	.2017(4)	.0934(3)	4.2(2)	3.5(2)	3.6(2)	.0(1)	1.0(1)	.3(1)
O2	.0817(2)	-.0329(3)	-.0097(3)	4.3(2)	3.9(2)	4.2(1)	-.3(1)	1.5(1)	-.4(1)
O3	.0253(2)	-.1430(3)	.1669(3)	4.9(2)	3.4(1)	3.7(1)	-.1(1)	1.2(1)	.0(1)
C1	0.00	.2319(9)	.25	14.2(9)	2.8(4)	12.1(8)	0.00	10.7(8)	0.00
C2	.0372(4)	.2955(5)	.1661(5)	7.6(3)	2.6(2)	4.9(2)	.1(2)	2.8(2)	.0(2)
C3	.1129(3)	.2365(5)	.0225(4)	4.1(2)	3.7(2)	4.1(2)	-.2(2)	.8(2)	.2(2)
C4	.1454(2)	.1557(5)	-.0538(4)	3.5(2)	4.2(2)	3.6(2)	.2(2)	.9(2)	.3(2)
C5	.1967(3)	.2087(6)	-.1194(6)	5.1(3)	4.7(3)	6.2(3)	-.5(2)	2.3(2)	.2(3)
C6	.2301(3)	.1388(8)	-.1970(5)	4.6(3)	6.9(4)	5.9(3)	-.1(3)	2.8(2)	.8(3)
C7	.2125(3)	.0135(7)	-.2114(5)	4.0(2)	7.2(4)	5.2(3)	1.0(2)	2.3(2)	-.1(2)
C8	.1629(3)	-.0429(6)	-.1494(5)	4.3(2)	4.9(3)	4.7(2)	.5(2)	1.5(2)	-.4(2)
C9	.1283(2)	.0272(6)	-.0673(4)	3.4(2)	4.5(2)	2.8(2)	.3(2)	.8(1)	-.0(2)
C10	0.00	-.1967(7)	.25	4.4(3)	3.2(3)	4.1(3)	0.00	.4(3)	0.00
C11	0.00	-.3393(8)	.25	8.9(6)	2.6(3)	7.0(5)	0.00	2.6(4)	0.00
NSOLV	.1461(5)	.4552(8)	.3972(8)	11.3(5)	6.8(4)	9.2(5)	-.8(4)	1.7(4)	-.6(4)
C1SLV	.1513(4)	.3910(7)	.4754(7)	6.7(4)	5.3(4)	7.5(4)	-1.9(3)	1.6(3)	-1.2(3)
C2SLV	.1575(5)	.306(1)	.5710(8)	9.2(5)	9.8(6)	8.1(5)	-3.6(4)	.8(4)	1.6(4)

ATOM	X	Y	Z	B
H2	.079(3)	.330(6)	.222(5)	5.00
H3	.044(3)	.373(7)	.139(5)	5.00
H4	.127(3)	.319(6)	.019(5)	5.00
H5	.203(3)	.279(6)	-.114(5)	5.00
H6	.266(3)	.170(6)	-.236(5)	5.00
H7	.237(3)	-.042(6)	-.259(6)	5.00
H8	.155(3)	-.137(7)	-.160(5)	5.00

[a] **The form of the thermal ellipsoid expression is:**

$$\exp [\ 1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)].$$

Table R. Final Atomic Positional and Thermal Parameters for $Cu_2(Dapsa)(OAc)\cdot CH_3OH$.[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU(1)	.11909(7)	.07110(4)	-.03624(3)	2.37(3)	4.10(3)	4.82(4)	-.04(3)	-.25(3)	.20(3)
CU(2)	.13136(7)	.20044(4)	.07754(3)	2.56(3)	3.79(3)	5.32(4)	.35(3)	-.18(3)	.06(3)
O(1)	.0502(4)	.1448(2)	.0151(2)	2.6(2)	4.6(2)	5.3(2)	.9(1)	-1.0(1)	-.1(2)
O(2)	.1856(4)	.0074(2)	-.0956(2)	2.9(2)	5.9(2)	6.1(3)	.1(2)	-.1(2)	-1.0(2)
O(2')	.2127(4)	.2625(2)	.1350(2)	3.6(2)	3.9(2)	6.2(3)	.4(2)	-.7(2)	-.5(2)
O(3)	.3021(4)	.0718(2)	-.0018(2)	2.8(2)	5.5(2)	6.4(3)	.7(2)	-.3(2)	-1.5(2)
O(3')	.3067(4)	.1512(2)	.0729(2)	2.7(2)	5.4(2)	6.2(3)	.6(2)	-.8(2)	-1.4(2)
OSOLV	.014(1)	.2257(6)	.3489(6)	11.8(6)	12.1(7)	24.6(*)	2.1(5)	9.6(7)	2.8(7)
N(1)	-.0683(5)	.0617(3)	-.0629(2)	3.2(2)	3.8(2)	4.9(3)	.3(2)	-.2(2)	.6(2)
N(1')	-.0411(5)	.2513(3)	.0782(2)	3.7(2)	4.0(2)	4.6(3)	.2(2)	-.5(2)	.7(2)
CSOLV	.078(1)	.2819(8)	.3324(5)	5.4(4)	11.0(7)	12.3(8)	-1.4(5)	.1(5)	1.5(7)

ATOM	X	Y	Z	B
C(1)	-.0780(7)	.1729(4)	-.0045(3)	4.7(1)
C(2)	-.1625(6)	.1104(4)	-.0284(3)	4.3(1)
C(2')	-.1475(6)	.2139(3)	.0439(3)	4.3(1)
C(3)	-.1131(7)	.0190(3)	-.1020(3)	4.2(1)
C(3')	-.0646(7)	.3129(4)	.1038(3)	4.5(1)
C(4)	-.0312(6)	-.0306(3)	-.1361(3)	3.9(1)
C(4')	.0282(6)	.3493(3)	.1425(3)	4.1(1)
C(5)	-.0962(7)	-.0782(4)	-.1764(3)	5.1(2)
C(5')	-.0161(8)	.4167(4)	.1677(3)	5.4(2)
C(6)	-.0272(7)	-.1271(4)	-.2092(3)	5.0(1)
C(6')	.0600(8)	.4542(4)	.2076(3)	5.7(2)
C(7)	.1144(7)	-.1283(3)	-.2066(3)	4.9(1)
C(7')	.1858(8)	.4246(4)	.2258(4)	5.8(2)
C(8)	.1833(7)	-.0832(4)	-.1688(3)	4.8(1)
C(8')	.2320(7)	.3596(4)	.2012(3)	5.2(1)
C(9)	.1146(6)	-.0330(3)	-.1322(3)	4.0(1)
C(9')	.1574(6)	.3217(3)	.1589(3)	4.1(1)
C(10)	.3568(6)	.1041(3)	.0398(3)	3.7(1)
C(11)	.5044(8)	.0824(4)	.0541(4)	6.5(2)

Table R. (Continued).

ATOM	X	Y	Z	B
HC1	-.06070	.20610	-.03760	5.00
HC2	-.23310	.12830	-.05430	5.00
HC2	-.20340	.08440	.00330	5.00
HC2'	-.20180	.18110	.06790	5.00
HC2'	-.21300	.25000	.02760	5.00
HC3	-.21140	.02070	-.10950	5.00
HC3'	-.15070	.33710	.09500	5.00
HC5	-.19420	-.07520	-.17940	5.00
HC5'	-.10290	.43570	.15530	5.00
HC6	-.07820	-.16040	-.23520	5.00
HC6'	.02960	.50060	.22400	5.00
HC7	.16980	-.16200	-.23050	5.00
HC7'	.24130	.44880	.25790	5.00
HC8	.28400	-.08370	-.16710	5.00
HC8'	.32390	.34040	.21090	5.00

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\,1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

Table S. Final Atomic Positional and Thermal Parameters for Cu_2(Dapsa)(OAc).[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU(1)	.22570(5)	.16409(5)	.0909(1)	3.04(5)	3.94(6)	3.60(5)	-.15(4)	.12(4)	-.61(4)
CU(2)	.03216(5)	.16661(5)	.0857(1)	3.03(5)	3.57(6)	3.96(5)	-.24(4)	.43(4)	-.56(4)
CU(3)	.48712(5)	-.07680(6)	.3960(1)	2.86(5)	5.12(7)	2.84(5)	-.24(4)	.03(4)	.29(4)
CU(4)	.29366(5)	-.07764(6)	.4017(1)	2.77(5)	5.78(7)	3.08(5)	-.17(4)	.09(4)	.21(5)
O11	.1319(3)	.1929(3)	.1425(6)	3.6(3)	3.4(3)	5.2(3)	-.7(2)	-.0(2)	-1.4(2)
O21	.3190(3)	.1439(3)	.0293(6)	3.2(3)	5.1(3)	4.7(3)	-.1(2)	.5(2)	-.8(3)
O31	.1849(3)	.0902(3)	-.0066(7)	3.6(3)	4.4(3)	8.1(4)	-1.2(2)	1.2(3)	-2.1(3)
O2'1	-.0653(3)	.1520(3)	.0088(6)	2.9(3)	5.1(3)	5.0(3)	-.2(2)	-.1(2)	-1.4(3)
O3'1	.0624(3)	.0890(3)	.0014(8)	3.9(3)	4.0(3)	8.6(4)	-.1(2)	.0(3)	-3.0(3)
O12	.3952(3)	-.0871(3)	.4751(5)	3.5(3)	7.2(4)	2.5(2)	-.3(3)	-.6(2)	1.1(3)
O22	.5792(3)	-.0748(3)	.3222(6)	2.9(2)	6.1(4)	4.0(3)	-.5(2)	.4(2)	-.0(3)
O32	.4415(3)	-.0561(4)	.2167(6)	3.9(3)	9.8(5)	3.1(3)	.3(3)	-.1(2)	1.3(3)
O2'2	.1930(3)	-.0731(3)	.3320(6)	2.8(3)	8.0(4)	4.5(3)	.1(3)	.0(2)	.6(3)
O3'2	.3186(3)	-.0549(4)	.2228(6)	3.9(3)	10.2(5)	3.4(3)	-.1(3)	-.7(2)	1.2(3)
N11	.2659(4)	.2331(4)	.2024(7)	3.1(3)	4.6(4)	4.4(4)	-.7(3)	.0(3)	-.7(3)
N1'1	.0042(4)	.2367(4)	.1983(7)	4.0(3)	4.5(4)	3.6(3)	-.4(3)	.3(3)	-1.7(3)
N12	.5310(4)	-.0887(4)	.5791(7)	3.1(3)	5.8(4)	3.2(3)	.1(3)	-.5(2)	.3(3)
N1'2	.2716(4)	-.1010(4)	.5793(7)	3.3(3)	6.4(5)	3.4(3)	.1(3)	1.0(3)	.0(3)

ATOM	X	Y	Z	B
C11	.1352(5)	.2559(5)	.1973(9)	4.0(2)
C21	.2103(5)	.2627(5)	.284(1)	4.6(2)
C2'1	.0690(5)	.2648(5)	.283(1)	4.7(2)
C31	.3323(5)	.2575(5)	.2076(9)	4.3(2)
C3'1	-.0611(5)	.2598(5)	.2066(9)	4.4(2)
C41	.3900(5)	.2312(4)	.1341(9)	4.0(2)
C4'1	-.1270(5)	.2331(4)	.1303(9)	4.2(2)
C51	.4597(5)	.2643(5)	.151(1)	4.8(2)
C5'1	-.1966(6)	.2638(5)	.155(1)	5.3(2)
C61	.5184(6)	.2431(6)	.086(1)	5.7(2)
C6'1	-.2620(6)	.2417(5)	.087(1)	5.3(2)
C71	.5101(6)	.1888(5)	.001(1)	5.1(2)
C7'1	-.2603(6)	.1917(5)	-.000(1)	5.2(2)
C81	.4416(5)	.1553(5)	-.0151(9)	4.5(2)
C8'1	-.1953(5)	.1596(5)	-.0280(9)	4.3(2)
C91	.3816(5)	.1773(4)	.0499(8)	3.4(2)
C9'1	-.1266(5)	.1817(4)	.0403(9)	3.9(2)

Table S. (Continued).

ATOM	X	Y	Z	B
C12	.4034(6)	-.1092(5)	.607(1)	5.4(2)
C22	.4764(6)	-.0968(5)	.680(1)	5.2(2)
C2'2	.3384(6)	-.1072(5)	.681(1)	5.8(2)
C32	.6008(5)	-.0882(4)	.6211(9)	4.1(2)
C3'2	.2081(5)	-.1090(5)	.6241(9)	4.3(2)
C42	.6589(5)	-.0810(4)	.5294(9)	4.1(2)
C4'2	.1389(5)	-.0994(5)	.540(1)	4.4(2)
C52	.7339(6)	-.0777(5)	.597(1)	5.2(2)
C5'2	.0722(6)	-.1083(5)	.606(1)	5.3(2)
C62	.7923(6)	-.0736(5)	.516(1)	5.8(2)
C6'2	.0037(7)	-.0998(6)	.531(1)	6.6(3)
C72	.7802(6)	-.0716(6)	.376(1)	6.0(2)
C7'2	-.0000(7)	-.0822(6)	.395(1)	6.7(3)
C82	.7043(5)	-.0729(5)	.309(1)	4.5(2)
C8'2	.0626(6)	-.0718(5)	.331(1)	5.8(2)
C92	.6462(5)	-.0762(4)	.3888(8)	3.5(2)
C9'2	.1353(5)	-.0814(4)	.4036(9)	4.2(2)
C101	.1233(5)	.0636(5)	-.0183(9)	4.2(2)
C111	.1198(6)	-.0054(6)	-.071(1)	6.2(2)
C102	.3762(5)	-.0467(4)	.1657(9)	3.8(2)
C112	.3673(6)	-.0208(5)	.022(1)	5.1(2)

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\ 1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

Table T. Final Atomic Positional and Thermal Parameters for Cu(DapsaH)·CH_3CN.[a]

ATOM	X	Y	Z	B_{11}	B_{22}	B_{33}	B_{12}	B_{13}	B_{23}
CU	-.0097(2)	.1162(1)	.0662(3)	3.62(9)	2.73(7)	2.58(7)	.2(1)	.47(6)	.1(1)

ATOM	X	Y	Z	B
O1	.0802(9)	.1724(6)	-.453(2)	5.4(3)
O11	-.1156(7)	.1152(7)	.240(1)	3.8(2)
O21	.1032(7)	.1045(6)	.235(1)	3.6(2)
N11	-.102(1)	.1688(6)	-.090(2)	3.2(3)
N21	.071(1)	.0728(7)	-.121(2)	3.5(3)
C1	-.012(1)	.1389(7)	-.372(2)	3.3(4)
C11	-.051(1)	.1993(8)	-.246(2)	3.5(4)
C12	-.202(1)	.1823(8)	-.080(2)	3.6(4)
C13	-.260(1)	.1652(8)	.076(2)	3.3(3)
C14	-.374(1)	.1822(9)	.068(2)	4.9(4)
C15	-.436(2)	.166(1)	.211(3)	5.8(5)
C16	-.337(1)	.1356(9)	.358(2)	4.8(4)
C17	-.279(1)	.118(1)	.369(2)	4.2(3)
C18	-.214(1)	.1337(8)	.225(2)	3.6(3)
C21	.009(1)	.0672(9)	-.287(2)	4.3(4)
C22	.168(1)	.0467(8)	-.106(2)	3.8(4)
C23	.226(1)	.0444(8)	.054(2)	3.4(3)
C24	.323(1)	.0068(8)	.042(2)	3.7(4)
C25	.394(1)	.002(1)	.182(3)	5.4(4)
C26	.359(1)	.028(1)	.351(2)	5.0(4)
C27	.262(1)	.0648(9)	.360(2)	3.9(4)
C28	.196(1)	.0728(8)	.210(2)	3.3(3)
NSOLV	.405(2)	.355(1)	.215(3)	9.2(6)
C1SLV	.351(2)	.317(1)	.286(3)	6.7(5)
C2SLV	.275(2)	.269(1)	.378(3)	10.1(7)

[a] The form of the thermal ellipsoid expression is:

$$\exp\left[\ 1/4(B_{11}h^2a^{*2} - B_{22}k^2b^{*2} - B_{33}\ell^2c^{*2} - 2B_{12}hka^*b^* - 2B_{13}h\ell a^*c^* - 2B_{23}k\ell b^*c^*)\right].$$

REFERENCES CITED

1. J. Lifshitz and E. Rosenbohm, Z. Electrochem., 21, 499 (1915).

2. J. N. van Niekerk and F. R. L. Schoening, Acta Cryst., 6, 227 (1953).

3. R. L. Carlin and A. J. van Duyneveldt, Inorganic Chemistry, Vol. 2, "Magnetic Properties of Transition Metal Compounds," Springer-Verlag, New York, N. Y., 1977, Chapters 4, 5 and 6.

4. K. T. McGregor, N. T. Watkins, D. L. Lewis, R. F. Drake, Derek J. Hodgson and W. E. Hatfield, Inorg. Nucl. Chem. Letters, 9, 423 (1973).

5. M. Kishita, Y. Muto and M. Kubo, Aust. J. Chem., 11, 309 (1958).

6. G. A. Barclay, C. M. Harris, B. F. Hoskins and E. Kokot, Proc. Chem. Soc., 264 (1961).

7. E. G. Jäger, Z. Chem., 6, 111 (1966) and references cited therein.

8. J. A. Bertrand and C. E. Kirkwood, Inorg. Chim. Acta, 4, 192 (1970).

9. J. A. Bertrand and J. A. Kelley, Inorg. Chim. Acta, 4, 203 (1970).

10. B. K. Teo and J. C. Calabrese, Chem. Comm., 832 (1975).

11. W. J. Stratton and D. H. Busch, J. Amer. Chem. Soc., 82, 4834 (1960) and references cited therein.

12. J. E. Andrew and A. B. Blake, J. Chem. Soc., (A), 1408 (1969).

13. P. W. Ball and A. B. Blake, J. Chem. Soc., (A), 1415 (1969).

14. P. W. Ball and A. B. Blake, J. Chem. Soc., Dalton Trans., 852 (1974).

15. P. D. W. Boyd, M. Gerloch and G. M. Sheldrick, J. Chem. Soc., Dalton Trans., 1097 (1974).

16. W. J. Stratton, Inorg. Chem., 9, 517 (1970).

17. S. Satapathy and B. Sahoo, J. Inorg. Nucl. Chem., 12, 2223 (1970).

18. A. Pajunen and R. Kivekäs, Finn. Chem. Lett., 39 (1974).

19. Etsuko Fujita, Ph.D. Thesis, Georgia Institute of Technology, 1976.

20. F. G. Mann, J. Chem. Soc., 2904 (1927).

21. J. G. Breckenridge and J. W. R. Hodgins, Can. J. Chem., 17, 331 (1939).

22. V. N. Evreev and S. V. Murashko, Russ. J. Inorg. Chem., 19, 995 (1974).

23. M. S. Okamoto and E. K. Barefield, Inorg. Chem., 13, 2611 (1974).

24. Reino Näsänen, Lauri Lemmetti and Kari Saramäki, Suom. Kemistil., B43, 486 (1970).

25. M. Näsäkkälä, Ann. Acad. Sci. Fenn., Ser A II, No. 181, 6 (1977).

26. S. J. Gruber, C. M. Harris and E. Sinn, J. Inorg. Nucl. Chem., 30, 1805 (1968) and references cited therein.

27. C. A. Bear, J. M. Waters and T. N. Waters, J. Chem. Soc., Dalton Trans., 1059 (1974).

28. K. Dey, R. L. De and S. K. Sen, J. Indian Chem. Soc., 49, 907 (1972).

29. B. N. Figgis and J. N. Lewis, "Modern Coordination Chemistry," J. Lewis and R. G. Wilkins, Ed., Interscience Publishers, New York, N. Y., 1960, p. 416.

30. Programs utilized were Zalkin's FORDAP Fourier summation program, Iber's NUCLS modification of the Busing-Martin-Levy least squares program, Doeden's RBANG rigid group orientation program, Stewart's ABSORB absorption correction program from the X-ray 72 system, and Johnson's ORTEP program.

31. R. F. Stewart, E. R. Davidson and W. T. Simpson, J. Chem. Phys., 42, 3175 (1965).

32. P. T. Cromer and J. T. Waber, Acta Cryst., 18, 104 (1965).

33. D. T. Cromer, Acta Cryst., 18, 17 (1965).

34. V. R. Mergehenn, L. Merz, W. Haase and R. Allman, Acta Cryst., B32, 505 (1976).

35. Private communication.

36. A. P. Ginsberg, Inorg. Chim. Acta, Rev., 5, 45 (1971).

37. L. Merz and W. Haase, Z Naturforsch., A, 31, 177 (1976).

38. W. J. Jones, S. Gupta, L. J. Theriot, F. T. Helm and W. A. Baker, Jr., Inorg. Chem., 17, 87 (1978).

39. R. L. Lintvedt, M. D. Glick, B. K. Tomlonovic, D. P. Gavel and J. M. Kuszaj, Inorg. Chem., 15, 1633 (1976).

40. J. A. Bertrand, C. P. Marabella and D. G. VanDerveer, Inorg. Chim. Acta, 26, 113 (1978).

41. G. Arcovito, M. Bonamico, A Domenicano and A. Vaciago, J. Chem. Soc., (B), 733 (1969).

42. J. A. Bertrand, C. P. Marabella and D. G. VanDerveer, Inorg. Chim. Acta, 25, L69 (1977).

43. Raikko Kivekäs, Aarne Pajunen and Kimmo Smolander, Finn. Chem. Lett., 256 (1977).