27
3-25-77
dwt
S

IS-4081

MASTER

CALCULATED PRESSURE-BROADENED
LINEWIDTHS OF H_2CO

NOTICE

PORTIONS OF THIS REPORT ARE ILLEGIBLE. It
has been reproduced from the best available
copy to permit the broadest possible avail-
ability.

G.D.T. Tejawani and E.S. Yeung

AMES LABORATORY, USERDA
IOWA STATE UNIVERSITY
AMES, IOWA

Date Transmitted: January 1977

PREPARED FOR THE U. S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
UNDER CONTRACT W-7405-eng-82

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

CALCULATED PRESSURE-BROADENED LINEWIDTHS OF H_2CO

G. D. T. Tejwani and E. S. Yeung

Ames Laboratory, ERDA
Iowa State University
Ames, Iowa 50011

NOTICE
This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Energy Research and Development Administration, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Date Transmitted: January 1977

PREPARED FOR THE U. S. ENERGY RESEARCH AND DEVELOPMENT
ADMINISTRATION UNDER CONTRACT NO. W-7405-eng-82

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Energy Research and Development Administration, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Available from: National Technical Information Service
U. S. Department of Commerce
P.O. Box 1553
Springfield, VA 22161

Price: Microfiche \$2.25

Printed copy: \$5.00

TABLE OF CONTENTS

	Page
ABSTRACT	iv
I. INTRODUCTION	1
II. COMPUTATIONAL PROCEDURE	4
III. RESULTS AND DISCUSSION	8
IV. REFERENCES	15
V. APPENDIX A ANDERSON'S APPROXIMATION THREE	18
VI. APPENDIX B LISTING OF LINEWIDTHS FOR TYPE A BAND	20
VII. APPENDIX C LISTING OF LINEWIDTHS FOR TYPE B BAND	36
VIII. APPENDIX D LISTING OF LINEWIDTHS FOR TYPE C BAND	61

ABSTRACT

Self-broadened and foreign-gas (N_2 and O_2) broadened line-widths of H_2CO at 300 K for a wide range of quantum numbers J and K_a , for all three types of bands, have been calculated using the Anderson-Tsao-Curnutte theory of line broadening. Due to the large dipole moment of formaldehyde, quadrupolar interactions were found to contribute negligibly to the line-width. Because of this, in the case of H_2CO-H_2CO collisions, only dipole-dipole interaction has been included. For H_2CO-N_2 and H_2CO-O_2 collisions, dipole-quadrupole interaction was taken into account. Computed values for self- and N_2 -broadened line-widths are in good agreement with the measured values reported in the literature. Air-broadened linewidths of H_2CO at 200 K have also been calculated, so that the temperature dependence can be estimated.

DISTRIBUTION LIST

Dr. E. S. Yeung	100
TIC	27
Chicago Operations Office, ERDA	1
Ames Laboratory Library	9

I. INTRODUCTION

Formaldehyde is one of the important secondary pollutants in the atmosphere.¹ This molecule is also of a great astrophysical interest.² In both of these areas of applications, the knowledge of parameters such as line center frequencies, line strengths, and linewidths is required. In this work, we will be primarily concerned with the linewidths. Hydrogen- and helium-broadening data are important in the interpretation of radio-astronomical measurements of the spectra of interstellar molecules. Whereas, air-broadened linewidths are necessary in determining the telluric abundance. Recently, there has been some useful work done on the H₂- and He-broadening of H₂CO lines.³ In this work, we will limit ourselves to self- and air-broadening of H₂CO. Air-broadened linewidths are obtained from N₂- and O₂-broadened values.

The only measurement available in the literature on $\gamma_{\text{H}_2\text{CO-N}_2}^0$ is that by Srivastava et al.⁴ on $3_{1,3}-3_{1,2}$ transition. They have also calculated the linewidth for this transition by using Anderson-Tsao-Curnutte^{5,6} theory as well as Murphy and Boggs⁷ theory of line broadening.

There are several papers^{3,4,8-11} on the experimental values of the self-broadened linewidths of H₂CO. Lawrence and Strandberg⁸ have reported an average value over a number of H₂CO lines between 6000 and 90,000 Mc./sec. Srivastava et al.⁴ have also measured the self-broadened linewidth of

$3_{1,3}-3_{1,2}$ transition in the microwave. Linewidths in the self-broadening for five transitions in the rotational spectrum of H_2CO have been determined by Rogers and Roberts.⁹ In Ref. 10, linewidth has been obtained for a doublet in the far-infrared region using D_2O laser. The transitions involved are $2^4_{6,19}-2^3_{6,18}$ and $2^4_{6,18}-2^3_{6,17}$ located near the $171.6 \mu\text{m}$ line of the D_2O laser. The value obtained is rather low. Self-broadened microwave collision diameters for a few Q-branch transitions in formaldehyde have been reported by Venkatachar and Roberts.¹¹ For a number of transitions, they observed the 'knee' behavior of the linewidth parameter, i.e., in such transitions, two distinct linewidth parameters were obtained in two pressure ranges which they had to use to get the best fit to the data points. The self-broadened linewidths in the microwave have also been measured by Nerf.³

There have also been some self-broadened linewidth calculations reported previously on formaldehyde.^{3,4,12} In Ref. 3, the linewidths were computed by using two models of molecular collisions: Anderson's pressure broadening theory,^{5,6} and a similar semiclassical theory of Rabitz and Gordon.¹³ The widths calculated from Anderson's approximation two,^{5,6} the one most often used, were about 20% too large. Satisfactory results were obtained with "approximation three" in which the interruption function, $S_2(b)$ is replaced with the quantity $1-\exp[-S_2(b)]$. Rabitz and Gordon's semiclassical theory¹³ of

molecular collisions based on the second Born approximation to the scattering matrix gave nearly identical results for approximation three. Anderson-Tsao-Curnutte^{5,6} and Murphy and Boggs⁷ theories were used for the linewidth calculation for $3_{1,3}-3_{1,2}$ transition in Ref. 4. Better agreement with the experimental value⁴ is obtained by using Murphy and Boggs theory of collision broadening. Murphy and Boggs¹² have also computed self-broadened linewidths for a few transitions in the microwave.

At this point it should be noted that Murphy and Boggs theory gives almost identical results as Anderson's approximation three.¹⁴ We have also verified this fact in our calculations presented in this work. The authors of Ref. 14 have mistakenly taken the credit for proposing Anderson's approximation number three. Their proposed new function is the same as Anderson's approximation three.¹⁵ We have elaborated on this point in Appendix A.

For molecules with a large value of the dipole moment, and hence involving strong dipolar interaction in the self-broadening, Anderson's approximation three or Murphy and Boggs theory gives better agreement with the experimental measurements.^{3,4,12,14,16-18} There does not seem to be or appear to be a rigorous explanation for this.^{3,14,17,18} We have also used Anderson-Tsao-Curnutte^{5,6} theory of line broadening expounded by Yamamoto and Aoki¹⁹ for asymmetric top molecules in our linewidth computations of H_2CO transitions. Anderson's

approximation three has been used in the self-broadening calculations. Linewidths have been computed in the range $0 \leq J \leq 15$ and $0 \leq K_a \leq 10$.

For foreign-gas-broadening, not involving strong dipolar interactions, Anderson's approximation two has been found to give good results.^{3,17,18,20} In our N_2 - and O_2 -broadened linewidth calculations of H_2CO in the quantum numbers range $0 \leq J \leq 30$ and $0 \leq K_a \leq 10$, we have used Anderson's approximation two. Self- as well as foreign-gas-broadened linewidths have been obtained for all three types of bands in H_2CO at 300 K. Air-broadened linewidths have also been computed at 200 K. The energy level of the lower state for each transition, along with an approximate value for the line position and the relative line intensity have been calculated²¹ for the strongest fundamental in each band type. These bands are ν_2 in type A, ν_4 in type B, and ν_6 in type C.

II. COMPUTATIONAL PROCEDURE

In the framework of Anderson-Tsao-Curnutte^{5,6} theory of line broadening, the linewidth γ° ($\text{cm}^{-1} \text{ atm}^{-1}$) of a rotational transition is related to the partial (optical) cross section σ_{J_2} for the absorbing molecule 1 and the perturbing molecule 2 by

$$\gamma^\circ = (nv/2\pi c) \sum_{J_2} \rho_{J_2} \sigma_{J_2}, \quad (1)$$

here n is the number density of molecules at one atmosphere and temperature T , v is the mean collision velocity, ρ_{J_2} is the fractional population of level J_2 of the perturbing molecule, and c is the velocity of light. The cross section σ_{J_2} is given by

$$\sigma_{J_2} = \int_0^{\infty} 2\pi b db S_2(b), \quad (2)$$

where $S_2(b)$ is the second-order radiation interruption function and b is the impact parameter. The integration in Eq. (2) can be evaluated in the closed form very easily under Anderson's approximation two.⁶ However, with approximation three, $S_2(b)$ in Eq. (2) is replaced by $1 - \exp[-S_2(b)]$, and the closed form integration of Eq. (2) is not feasible. Therefore, for the self-broadening in the present computations numerical integration was performed. The expressions for $S_2(b)$ for dipolar and quadrupolar interactions in the case of asymmetric top molecule line broadening are given in Refs. 19 and 21. Further details of the theory can be seen in Refs. 5, 6, and 19.

We have earlier described our computer programs for line-width calculations in the case of the asymmetric top molecule.²¹ Our program for the self-broadening has been modified in this work to incorporate the numerical integration of Eq. (2). We have checked many FORTRAN IV numerical quadrature sub-routines available in the software literature for accuracy and

efficiency. The subroutine QSF in the Scientific Subroutine Package by IBM was found to give the results within the acceptable limits with the consumption of the least amount of CPU time. For the test cases, the truncation errors were computed to be less than 0.1%. The subroutine QSF performs the integration of an equidistantly calculated function by Simpson's rule.²² For $b \geq 65$, the integrand in Eq. (2) was found to be completely negligible for H_2CO self-broadening.

Just as in the case of H_2S , all rotational levels occur in the ground state of H_2CO .²³ The rest of the details on the computer program are the same as in Refs. 21 and 23. In the present calculations for a few randomly chosen transitions, dipole-quadrupole, quadrupole-dipole, and quadrupole-quadrupole interactions in the self-broadening, and the quadrupole-quadrupole interaction in the case of foreign-gas-broadening of H_2CO were found to contribute negligibly to the linewidth. This is due to the fact that H_2CO has a rather large dipole moment,² giving rise to very strong dipole-dipole and dipole-quadrupole interactions in the self- and foreign-gas-broadening, respectively. In the presence of these strong dipolar interactions, the effect of other interactions is completely masked,⁷ particularly since the quadrupole moment tensor of formaldehyde²⁴ is quite low. Therefore, in our final and extensive computations presented in this report only dipole-dipole interaction in the self-broadening and

only dipole-quadrupole interaction in the N_2 - and O_2 -broadening of H_2CO was included.

For H_2CO linewidth calculation, the contribution to γ° through $S_2(b)$ from dipole transition probability terms for $|\Delta K_a|$ and $|\Delta K_c| \leq 5$ need to be taken into account.²¹ However, in the self-broadening for the perturbing molecule, only the terms with $|\Delta K_a|$ and $|\Delta K_c| \leq 3$ were included because the contribution from $S_2(b)$ terms with $|\Delta K_a|$ and $|\Delta K_c| > 3$ for dipole transition probability was insignificant compared to the remaining terms to the linewidth value for H_2CO . For the perturbing molecule in self-broadening, rotational levels with $J \leq 30$ and $K_a \leq 10$ were taken into account. This range of quantum numbers covers 99.76% of the population in the Boltzmann distribution for the ground vibrational state at 300 K. The pertinent data²¹ for these rotational levels (total number being 541) were put on a disk.²⁵

Rotational and centrifugal distortion constants, in the ground state of formaldehyde have been taken from Johnson et al.² Small differences in the rotational and centrifugal distortion constants between the ground and upper states of H_2CO in the linewidth computations of vibration-rotation bands have been neglected. The ground state rotational and centrifugal distortion constants for nitrogen and oxygen were obtained from the pure rotational Raman spectra of these gases.²⁶ Kinetic theory collision diameters for N_2 and O_2 were taken from Svehla.²⁷ Kinetic theory collision diameter of H_2CO is

also required in the foreign-gas-broadening calculations. It was obtained by using the relations from Ref. 27 and the data on physical properties of H_2CO from Ref. 28. The calculated value for the kinetic theory collision diameter of H_2CO is 3.8 Å. The quadrupole moments of N_2 and O_2 have been taken from the induced birefringence measurements of Buckingham et al.²⁹

Although linewidth results in this report are very general and should be applicable to all the bands of a particular band type, approximate line positions and relative line intensity calculations have been performed for ν_2 , ν_4 , and ν_6 fundamentals among the type A, type B, and type C bands, respectively. These three are the strongest fundamentals in the respective band types.³⁰ The band origins for these three bands have been taken from Refs. 31 (ν_2 band), 32 (ν_4 band), and 33 (ν_6 band). It should be noted that we have used the notations of the normal modes given in Ref. 30.

III. RESULTS AND DISCUSSION

In Table 1, measured self-broadened linewidths for several transitions in the pure rotational spectrum of H_2CO are compared with the computed values obtained in this work. The overall agreement is quite good. In particular, our results are in excellent agreement with the more extensive measurements of Nerf³ with typical accuracies of 0.5-0.8 MHz/Torr. The experimental value obtained in Ref. 10 is very low. However, this

Table 1. Comparison of experimental and calculated values of the self-broadened linewidths of H_2CO in the microwave at 300 K.

Transition	$\gamma_{\text{H}_2\text{CO}-\text{H}_2\text{CO}}^{\circ} \text{ (cm}^{-1} \text{ atm}^{-1}\text{)}$	
	This work	Measured values
$1_{1,0}-1_{1,1}$	0.781	0.558 ^a
$1_{0,1}-2_{0,2}$	0.660	0.573 ^b
$1_{1,1}-2_{1,2}$	0.731	0.733 ^b
$1_{1,0}-2_{1,1}$	0.727	0.725 ^b
$2_{1,2}-2_{1,1}$	0.666	0.558 ^a
$2_{0,2}-3_{0,3}$	0.592	0.527 ^b
$2_{1,2}-3_{1,3}$	0.649	0.616 ^b
$2_{1,1}-3_{1,2}$	0.650	0.621 ^b
$2_{2,1}-3_{2,2}$	0.777	0.766 ^b
$2_{2,0}-3_{2,1}$	0.778	0.778 ^b
$3_{1,3}-3_{1,2}$	0.621	0.532 ^a ; 0.342 ^c
$3_{1,3}-4_{1,4}$	0.627	0.583 ^b
$3_{1,2}-4_{1,3}$	0.640	0.586 ^b
$4_{1,4}-4_{1,3}$	0.636	0.507 ^a
$5_{1,5}-5_{1,4}$	0.682	0.456 ^a
$6_{1,6}-6_{1,5}$	0.739	0.654 ^b

Table 1. (Continued)

Transition	$\gamma_{\text{H}_2\text{CO}-\text{H}_2\text{CO}}^{\circ} \text{ (cm}^{-1} \text{ atm}^{-1}\text{)}$	
	This work	Measured values
$7_{2,6}-7_{2,5}$	0.819	0.525^{d}
$9_{1,9}-9_{1,8}$	0.864	0.720^{b}
$9_{2,8}-9_{2,7}$	0.881	$0.482^{\text{d}}; 0.626^{\text{e}}$
$11_{2,10}-11_{2,9}$	0.882	0.664^{d}
$15_{3,13}-15_{3,12}$	0.762	$0.558^{\text{d}}; 0.195^{\text{d}}$
$17_{2,15}-17_{2,14}$	0.620	$0.633^{\text{d}}; 0.315^{\text{d}}$
$17_{3,15}-17_{3,14}$	0.654	0.510^{e}
$19_{3,17}-19_{3,16}$	0.543	$0.361^{\text{d}}; 0.254^{\text{d}}$
$24_{6,19}-23_{6,18}$	0.431	0.083^{f}
$24_{6,18}-23_{6,17}$	0.431	0.083^{f}
$25_{4,22}-25_{4,21}$	0.315	$0.389^{\text{d}}; 0.064^{\text{d}}$

^aFrom Ref. 9.^bFrom Ref. 3.^cFrom Ref. 4.^dFrom Ref. 11.^eFrom G. F. Crable, private communication to the authors of Ref. 12.^fFrom Ref. 10.

value was obtained through an indirect measurement with several approximations.¹⁰ Anderson-Tsao-Curnutte's theory gives a unique value for the linewidth parameter, and therefore the 'knee' behavior observed by Venkatacher and Roberts¹¹ in the case of a few transitions in H_2CO cannot be explained by the theory.

As expected, our computed results are in essential agreement with previous linewidth calculations in the self-broadening^{3,4,12} of H_2CO . Our results are almost identical with those of Nerf³ with Anderson's approximation three for 12 transitions in Ref. 3. Very slight differences are due to the slightly different molecular parameters used in Ref. 3 as compared to ours. Also, there may be small differences due to the numerical integration method used in these two works. Our results also agree with the computations of Murphy and Boggs.¹² There seems to be some kind of programming error in Ref. 4, as their result is very low and unexpected for such a low J value transition.^{3,12}

For the only measurement available for N_2 -broadened linewidths of H_2CO , i.e., for $3_{1,3}-3_{1,2}$ transition, our value of $0.150 \text{ cm}^{-1} \text{ atm}^{-1}$ is in good agreement with the experimental value⁴ of $0.178 \text{ cm}^{-1} \text{ atm}^{-1}$.

N_2 - and O_2 -broadened linewidths of H_2CO at 300 K for about 800 transitions in type A and type C bands and for about 1300 transitions in type B band have been computed. These transitions are in the range of $0 \leq J \leq 30$ and $0 \leq K_a \leq 10$,

with the restriction that ΔK_a and $\Delta K_c \leq 1$. Self-broadened linewidths at 300 K have been calculated for transitions with $0 \leq J \leq 15$ and $0 \leq K_a \leq 10$ for all three types of bands in H_2CO . These results along with air-broadened values at 200 K are given in Appendices B, C, and D for bands of type A, type B, and type C, respectively. For H_2CO , among the fundamental bands, ν_1 , ν_2 , and ν_3 belong to type A. ν_4 and ν_5 are of type B, and ν_6 is type C band. Pure rotational band is also of type A. As can be seen from Appendices B to D, linewidths show strong dependence with respect to the quantum numbers.

Weighted mean linewidths of H_2CO broadened by N_2 , O_2 , air, and H_2CO at 300 K and by N_2 , O_2 , and air at 200 K for all three types of bands are given in Table 2. Averaging has been performed over all the transitions in Appendices B, C, and D, for type A, type B, and type C bands, respectively. For the self-broadening, the averaging is restricted to transitions with $J \leq 15$. Weighting has been done with respect to the relative intensity of the transition. Weighted average linewidths seem to be independent of the band type in the case of H_2CO . The temperature dependence of N_2 -, O_2 -, and air-broadened linewidths of H_2CO transitions can be obtained by the use of Eqs. (8) and (9) of Ref. 34.

Rotational energy level of the lower state for each transition along with its approximate line position and relative line intensity have also been tabulated in Appendices. Line

Table 2. Intensity weighted average linewidths of H_2CO .
 Units of linewidth are $\text{cm}^{-1} \text{ atm}^{-1}$

Band type	Broadener	Average linewidth	
		at 300 K	at 200 K
A	N_2	0.1193	0.1628
	O_2	0.0616	0.0842
	Air	0.1072	0.1463
	H_2CO	0.8414	
B	N_2	0.1195	0.1632
	O_2	0.0617	0.0843
	Air	0.1073	0.1466
	H_2CO	0.8411	
C	N_2	0.1199	0.1639
	O_2	0.0617	0.0845
	Air	0.1077	0.1472
	H_2CO	0.8416	

position and relative line intensity data in Appendices B, C, and D refer to ν_2 , ν_4 , and ν_6 fundamentals, respectively. From the point of view of detecting H_2CO in the atmosphere, $3.6 \mu\text{m}$ region is most promising since it is generally free from overlapping from other stronger telluric features. ν_1 and ν_4 fundamental bands occur in this region besides several combination bands and $2\nu_3$ overtone.³⁵ High-resolution measurements in the region from 2600 to 3400 cm^{-1} have recently been reported by Nakagawa et al.³⁵

IV. REFERENCES

1. See, for example, Report of the Study of Man's Impact on Climate (SMIC), Inadvertent Climate Modification, MIT Press, Cambridge, 1971.
2. D. R. Johnson, F. J. Lovas, and W. H. Kirchhoff, J. Phys. Chem. Ref. Data 1, 1011 (1972).
3. R. B. Nerf, Jr., J. Mol. Spectrosc. 58, 451 (1975).
4. G. P. Srivastava, H. O. Gautam, and A. Kumar, J. Phys. B: Atom. Molec. Phys. 6, 743 (1973).
5. P. W. Anderson, Phys. Rev. 76, 647 (1949).
6. C. J. Tsao and B. Curnutte, J. Quant. Spectrosc. Radiat. Transfer 2, 41 (1962).
7. J. S. Murphy and J. E. Boggs, J. Chem. Phys. 47, 691 (1967).
8. R. B. Lawrence and M.W.P. Strandberg, Phy. Rev. 83, 363 (1951).
9. D. V. Rogers and J. A. Roberts, J. Mol. Spectrosc. 46, 200 (1973).
10. C. Yamada, T. Shigemune, and E. Hirota, J. Mol. Spectrosc. 54, 261 (1975).
11. A. C. Venkatachar and J. A. Roberts, J. Mol. Spectrosc. 57, 166 (1975).
12. J. S. Murphy and J. E. Boggs, J. Chem. Phys. 51, 3891 (1969).
13. H. A. Rabitz and R. G. Gordon, J. Chem. Phys. 53, 1815 (1970).
14. G. K. Johri and S. L. Srivastava, Chem. Phys. Lett. 39, 579 (1976).
15. P. W. Anderson, Ph.D. dissertation, Harvard University, Cambridge, Massachusetts, 1949.
16. P. C. Pandey and S. L. Srivastava, Indian J. Pure Appl. Phys. 8, 245 (1970).
17. Krishnaji, J. Scient. Ind. Res. 32, 168 (1973).

18. H. Rabitz, Ann. Rev. Phy. Chem. 25, 155 (1974).
19. G. Yamamoto and T. Aoki, J. Quant. Spectrosc. Radiat. Transfer 12, 227 (1972).
20. G. Birnbaum, Advan. Chem. Phys. 12, 487 (1967).
21. G.D.T. Tejwani and E. S. Yeung, U. S. Energy Research and Development Administration Report IS-3575, Ames Laboratory, Iowa State University, Ames, Iowa, 1975. (Available from National Technical Information Service, Springfield, VA 22161).
22. F. B. Hildebrand, Introduction to Numerical Analysis (McGraw-Hill, New York, 1956).
23. G.D.T. Tejwani and E. S. Yeung, U. S. Energy Research and Development Administration Report IS-3904, Ames Laboratory, Iowa State University, Ames, Iowa, 1976. (Available from National Technical Information Service, Springfield, VA 22161).
24. J. E. Bloor and Z. B. Maksič, Mol. Phys. 22, 351 (1971).
25. G.D.T. Tejwani and E. S. Yeung, U. S. Energy Research and Development Administration Report IS-3621, Ames Laboratory, Iowa State University, Ames, Iowa, 1975. (Available from National Technical Information Service, Springfield, VA 22161).
26. R. J. Butcher, D. V. Willetts, and W. J. Jones, Proc. R. Soc. London Ser. A 324, 231 (1971).
27. R. A. Svehla, NASA Tech. Rep. R-132 (1962).
28. Handbook of Chemistry and Physics, edited by R. C. Weast et al. (Chemical Rubber, Cleveland, Ohio, 1972).
29. A. D. Buckingham, R. L. Disch, and D. A. Dunmur, J. Am. Chem. Soc. 90, 3104 (1968).
30. T. Shimanochi, Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.) 11, Part 2 (1967).
31. T. Nakagawa, H. Kashiwagi, H. Kurihara, and Y. Morino, J. Mol. Spectrosc. 31, 436 (1969).
32. K. Yamada, T. Nakagawa, K. Kuchitsu, and Y. Morino, J. Mol. Spectrosc. 38, 70 (1971).

33. T. Nakagawa and Y. Morino, J. Mol. Spectrosc. 38, 84 (1971).
34. G.D.T. Tejawani and E. S. Yeung, J. Chem. Phys. 63, 1513 (1975).
35. T. Nakagawa, K. Yamada, and K. Kuchitsu, J. Mol. Spectrosc. 63, 485 (1976).

V. APPENDIX A

ANDERSON'S APPROXIMATION THREE

In the Anderson's theory of pressure broadening,⁵ the interruption function $S_2(b)$, which determines the effect on the linewidth of a collision with distance of closest approach b , increases without bound as b goes to zero. In his thesis,¹⁵ he proposed several methods for limiting the magnitude of $S_2(b)$ to avoid this characteristic divergence: his "approximation one" replaced $S_2(b)$ with $1 - \cos[2S_2(b)]^{1/2}$, "approximation two" set an upper limit of unity on $S_2(b)$, and "approximation three" replaced $S_2(b)$ with the quantity $1 - \exp[-S_2(b)]$. He refers to approximation two as working approximation, approximation one always gives an upper limit to cross-section σ , and approximation three is a sort of lower limit.¹⁵ It is not possible to assign¹⁵ rigorously a lower limit to σ . Somehow in Ref. 5, his approximation three appears as $1 - \exp[-2S_2(b)]$ instead of $1 - \exp[-S_2(b)]$. We believe this to be a typographical error. Besides, if he intended approximation three to be lower limit $1 - \exp[-2S_2(b)]$ cannot be right because it gives a value for linewidth which is even larger than obtained by approximation number two as can be seen in Refs. 14 and 16, and also verified by us for the case of H_2CO and a few other molecules in self- as well as foreign-gas-broadening.

The correct version of approximation three has been used by Nerf in Ref. 3. Clearly, an alternative new interruption function proposed by Johri and Srivastava¹⁴ is nothing new. It is just Anderson's approximation three as he originally intended in his thesis.¹⁵

VI. APPENDIX B

LISTING OF LINEWIDTHS FOR TYPE A BAND

Linewidths and other spectral parameters for transitions in a type A band of H_2CO are listed in this Appendix. First three columns in the tabulation refer to the lower state quantum numbers J , K_a , and K_c , respectively; while column numbers 4 to 6 give these quantum numbers for the upper state of the transition. Column number 7 shows the line position in cm^{-1} for the transition in the ν_2 fundamental of H_2CO . Rotational energy level in cm^{-1} for the lower state is given in the column 8 and the relative line intensity for the transition in the ν_2 band is shown in the column 9. Next four columns, i.e., columns 10 through 13, list self-, N_2 -, O_2 -, and air-broadened linewidths of H_2CO given in the units of $10^{-4} \text{ cm}^{-1} \text{ atm}^{-1}$. $\gamma_{\text{H}_2\text{CO-air}}^\circ$ is at 200 K, all other linewidth values reported here are at 300 K. All the linewidth results in this Appendix should be applicable to any type A band. Lower and upper states are interchangeable as far as linewidth values are concerned.

Listing of Linewidth Parameters for Type A Band of H_2CO

Lower State			Upper State			Approximate Line Position in the ν_2 Band (cm^{-1})	Rota- tional Energy of the Lower State (cm^{-1})	Rela- tive Line Inten- sity (ν_2 Band) at 300 K	γ° (in $10^{-4} \text{ cm}^{-1} \text{ atm}^{-1}$) of H_2CO Lines Broadened by			
J	K_a	K_c	J	K_a	K_c				H_2CO	N_2	O_2	Air
									300 K	300 K	200 K	
0	0	0	1	0	1	1748.5	0.0	1.00	7697	1459	653	1822
1	1	1	1	1	0	1746.3	10.54	1.43	7808	1462	655	1817
1	1	1	2	1	2	1750.8	10.54	1.43	7312	1479	660	1833
2	0	2	1	0	1	1741.2	7.29	1.93	6603	1493	664	1853
2	0	2	3	0	3	1753.4	7.29	2.91	5920	1507	675	1834
2	1	1	1	1	0	1741.1	15.72	1.39	7266	1480	661	1832
2	1	1	2	1	2	1745.6	15.72	0.77	6658	1495	667	1846
2	1	1	3	1	2	1753.6	15.72	2.48	6499	1495	674	1818
2	2	0	2	2	1	1746.1	40.04	2.75	8183	1461	657	1797
2	2	0	3	2	1	1753.4	40.04	1.38	7776	1472	664	1794
3	1	3	2	1	2	1739.1	22.28	2.39	6489	1498	672	1833
3	1	3	3	1	2	1747.1	22.28	0.52	6214	1498	679	1804
3	1	3	4	1	4	1755.5	22.28	3.39	6271	1485	681	1775
3	2	2	2	2	1	1738.8	47.33	1.32	7774	1471	664	1794
3	2	2	3	2	1	1746.1	47.33	1.86	7240	1482	670	1791
3	2	2	4	2	3	1755.8	47.33	2.40	7198	1472	674	1755
3	3	1	3	3	0	1746.1	88.24	3.44	8577	1450	657	1768
3	3	1	4	3	2	1755.8	88.24	1.15	8349	1451	663	1750
4	0	4	3	0	3	1736.4	24.26	3.54	5917	1489	683	1758
4	0	4	5	0	5	1758.2	24.26	4.48	6353	1442	684	1657
4	1	3	3	1	2	1736.1	33.28	3.18	6397	1476	682	1742
4	1	3	4	1	4	1744.5	33.28	0.38	6360	1463	684	1713
4	1	3	5	1	4	1758.6	33.28	4.12	6755	1428	681	1644
4	2	2	3	2	1	1736.4	57.08	2.27	7204	1472	674	1755
4	2	2	4	2	3	1746.1	57.08	1.37	7060	1463	678	1719
4	2	2	5	2	3	1758.3	57.08	3.22	7242	1435	678	1673
4	3	1	3	3	0	1736.4	97.96	1.09	8349	1451	663	1750
4	3	1	4	3	2	1746.1	97.96	2.53	7999	1452	669	1731
4	3	1	5	3	2	1758.3	97.96	2.01	8028	1432	671	1691
4	4	0	4	4	1	1746.1	155.16	3.42	8894	1436	656	1746

4	4	0	5	4	1	1758.2	155.16	0.86	8818	1428	661	1716
5	1	5	4	1	4	1734.4	43.41	3.87	6525	1442	683	1680
5	1	5	5	1	4	1748.5	43.41	0.30	6820	1406	680	1612
5	1	5	6	1	6	1760.2	43.41	4.77	7016	1383	678	1584
5	2	4	4	2	3	1734.0	69.18	2.99	7230	1436	678	1673
5	2	4	5	2	3	1746.2	69.18	1.05	7310	1408	679	1626
5	2	4	6	2	5	1760.7	69.18	3.86	7574	1376	674	1581
5	3	3	4	3	2	1733.9	110.11	1.87	8028	1432	671	1691
5	3	3	5	3	2	1746.1	110.11	1.95	7961	1412	673	1652
5	3	3	6	3	4	1760.7	110.11	2.68	8133	1388	671	1609
5	4	2	4	4	1	1734.0	167.31	0.80	8818	1428	661	1716
5	4	2	5	4	1	1746.1	167.31	2.63	8625	1419	665	1687
5	4	2	6	4	3	1760.7	167.31	1.51	8702	1397	664	1648
5	5	1	5	5	0	1746.1	240.76	2.89	9131	1422	654	1731
5	5	1	6	5	2	1760.7	240.76	0.58	9175	1406	657	1697
6	0	6	5	0	5	1731.6	50.86	4.66	6963	1377	678	1558
6	0	6	7	0	7	1763.0	50.86	5.53	7568	1308	665	1476
6	1	5	5	1	4	1731.1	60.86	4.32	7304	1364	673	1549
6	1	5	6	1	6	1742.7	60.86	0.23	7389	1341	671	1521
6	1	5	7	1	6	1763.6	60.86	5.17	7870	1294	660	1460
6	2	4	5	2	3	1731.5	83.91	3.54	7600	1376	674	1579
6	2	4	6	2	5	1745.9	83.91	0.82	7742	1349	670	1534
6	2	4	7	2	5	1763.2	83.91	4.34	8059	1314	663	1492
6	3	3	5	3	2	1731.5	124.69	2.45	8133	1388	671	1609
6	3	3	6	3	4	1746.1	124.69	1.53	8199	1359	668	1566
6	3	3	7	3	4	1763.1	124.69	3.17	8424	1328	662	1528
6	4	2	5	4	1	1731.5	181.89	1.38	8702	1397	664	1648
6	4	2	6	4	3	1746.1	181.89	2.07	8684	1373	664	1608
6	4	2	7	4	3	1763.1	181.89	1.99	8842	1344	660	1574
6	5	1	5	5	0	1731.5	255.33	0.53	9175	1406	657	1697
6	5	1	6	5	2	1746.1	255.33	2.27	9103	1391	658	1662
6	5	1	7	5	2	1763.1	255.33	1.02	9213	1366	656	1626
6	6	0	6	6	1	1746.1	344.96	2.13	9305	1412	651	1726
6	6	0	7	6	1	1763.1	344.96	0.36	9443	1392	652	1689
7	1	7	6	1	6	1729.7	73.90	4.76	7572	1323	668	1501
7	1	7	7	1	6	1750.6	73.90	0.19	7932	1277	658	1441
7	1	7	8	1	8	1764.8	73.90	5.58	8080	1262	654	1429
7	2	6	6	2	5	1729.1	100.73	3.93	8020	1316	664	1501
7	2	6	7	2	5	1746.4	100.73	0.66	8190	1200	657	1457
7	2	6	8	2	7	1765.5	100.73	4.68	8432	1255	650	1435
7	3	5	6	3	4	1729.1	141.71	2.87	8423	1328	662	1528
7	3	5	7	3	4	1746.1	141.71	1.22	8522	1297	656	1488
7	3	5	8	3	6	1765.6	141.71	3.52	8742	1270	649	1461
7	4	4	6	4	3	1729.1	198.89	1.80	8842	1344	660	1574
7	4	4	7	4	3	1746.1	198.89	1.65	8892	1316	656	1534
7	4	4	8	4	5	1765.5	198.89	2.34	9065	1291	649	1504
7	5	3	6	5	2	1729.1	272.33	0.92	9213	1366	656	1626
7	5	3	7	5	2	1746.1	272.33	1.81	9226	1341	654	1590
7	5	3	8	5	4	1765.5	272.33	1.33	9361	1316	650	1557
7	6	2	6	6	1	1729.1	361.95	0.32	9443	1392	652	1689
7	6	2	7	6	1	1746.1	361.95	1.70	9461	1371	652	1652
7	6	2	8	6	3	1765.5	361.95	0.62	9583	1347	649	1620
7	7	1	7	7	0	1746.1	467.66	1.39	9432	1406	649	1725
7	7	1	8	7	2	1765.5	467.66	0.20	9629	1383	648	1689

8	0	8	7	0	7	1726.9	86.97	5.20	8074	1245	652	1410
8	0	8	9	0	9	1767.7	86.97	5.99	8438	1189	639	1359
8	1	7	7	1	6	1726.1	98.42	4.85	8338	1236	646	1401
8	1	7	8	1	8	1740.3	98.42	0.15	8364	1216	643	1385
8	1	7	9	1	8	1768.6	98.42	5.61	8655	1178	632	1353
8	2	6	7	2	5	1726.5	120.62	4.16	8486	1247	649	1426
8	2	6	8	2	7	1745.6	120.62	0.52	8562	1219	642	1397
8	2	6	9	2	7	1768.2	120.62	4.86	8808	1188	636	1374
8	3	5	7	3	4	1726.6	161.17	3.14	8743	1270	649	1461
8	3	5	8	3	6	1746.1	161.17	0.98	8816	1241	642	1431
8	3	5	9	3	6	1768.0	161.17	3.74	8997	1215	636	1406
8	4	4	7	4	3	1726.7	218.33	2.08	9066	1291	649	1504
8	4	4	8	4	5	1746.1	218.33	1.32	9115	1264	643	1474
8	4	4	9	4	5	1768.0	218.33	2.57	9267	1237	637	1448
8	5	3	7	5	2	1726.7	291.76	1.19	9361	1316	650	1557
8	5	3	8	5	4	1746.1	291.76	1.46	9392	1290	645	1525
8	5	3	9	5	4	1768.0	291.76	1.55	9520	1266	639	1500
8	6	2	7	6	1	1726.7	381.37	0.56	9583	1347	649	1620
8	6	2	8	6	3	1746.1	381.37	1.36	9613	1322	646	1585
8	6	2	9	6	3	1767.9	381.37	0.81	9724	1299	641	1556
8	7	1	7	7	0	1726.7	487.07	0.18	9629	1383	648	1689
8	7	1	8	7	2	1746.1	487.07	1.12	9707	1359	646	1653
8	7	1	9	7	2	1767.9	487.07	0.35	9833	1336	643	1623
8	8	0	8	8	1	1746.1	608.75	0.82	9512	1403	646	1726
8	8	0	9	8	1	1767.9	608.75	0.10	9751	1378	644	1692
9	1	9	8	1	8	1725.0	113.73	5.09	8469	1204	639	1375
9	1	9	9	1	8	1753.3	113.73	0.12	8643	1166	628	1343
9	1	9	10	1	10	1769.5	113.73	5.81	8710	1157	625	1336
9	2	8	8	2	7	1724.3	141.95	4.27	8746	1199	635	1378
9	2	8	9	2	7	1746.9	141.95	0.42	8807	1168	628	1352
9	2	8	10	2	9	1770.3	141.95	4.92	8916	1154	622	1337
9	3	7	8	3	6	1724.2	183.06	3.28	8997	1215	636	1406
9	3	7	9	3	6	1746.1	183.06	0.79	9013	1190	628	1381
9	3	7	10	3	8	1770.4	183.06	3.83	9139	1170	622	1366
9	4	6	8	4	5	1724.2	240.21	2.25	9267	1237	637	1448
9	4	6	9	4	5	1746.1	240.21	1.07	9275	1212	630	1420
9	4	6	10	4	7	1770.4	240.21	2.69	9386	1191	624	1403
9	5	5	8	5	4	1724.2	313.62	1.36	9520	1266	639	1500
9	5	5	9	5	4	1746.1	313.62	1.17	9524	1240	633	1470
9	5	5	10	5	6	1770.4	313.62	1.69	9619	1218	628	1450
9	6	4	8	6	3	1724.3	403.22	0.71	9724	1299	641	1556
9	6	4	9	6	3	1746.1	403.22	1.10	9733	1274	636	1528
9	6	4	10	6	5	1770.4	403.22	0.94	9816	1251	631	1506
9	7	3	8	7	2	1724.3	508.91	0.31	9833	1336	643	1623
9	7	3	9	7	2	1746.1	508.91	0.90	9870	1312	639	1590
9	7	3	10	7	4	1770.4	508.91	0.45	9955	1290	635	1565
9	8	2	8	8	1	1724.3	630.58	0.09	9751	1378	644	1692
9	8	2	9	8	1	1746.1	630.58	0.66	9871	1354	642	1657
9	8	2	10	8	3	1770.4	630.58	0.18	9988	1333	638	1630
9	9	1	9	9	0	1746.1	768.11	0.43	9555	1402	645	1728
9	9	1	10	9	2	1770.3	768.11	0.05	9815	1378	642	1696
10	0	10	9	0	9	1722.2	132.48	5.21	8646	1142	625	1320
10	0	10	11	0	11	1772.3	132.48	5.90	8704	1107	610	1294
10	1	9	9	1	8	1721.1	145.91	4.84	8799	1135	618	1314

10	1	9	10	1	10	1737.3	145.91	0.10	8761	1123	614	1307
10	1	9	11	1	10	1773.6	145.91	5.50	8775	1099	605	1293
10	2	8	9	2	7	1721.5	167.31	4.24	8974	1149	621	1333
10	2	8	10	2	9	1745.0	167.31	0.33	8890	1130	614	1318
10	2	8	11	2	9	1773.2	167.31	4.84	8974	1112	607	1311
10	3	7	9	3	6	1721.8	207.42	3.32	9138	1170	622	1366
10	3	7	10	3	8	1746.1	207.42	0.63	9084	1146	615	1348
10	3	7	11	3	8	1772.9	207.42	3.82	9140	1130	610	1339
10	4	6	9	4	5	1721.8	264.52	2.33	9386	1191	624	1403
10	4	6	10	4	7	1746.1	264.52	0.86	9336	1169	617	1384
10	4	6	11	4	7	1772.8	264.52	2.72	9385	1152	613	1374
10	5	5	9	5	4	1721.8	337.91	1.46	9619	1218	628	1450
10	5	5	10	5	6	1746.1	337.91	0.94	9574	1196	622	1429
10	5	5	11	5	6	1772.8	337.91	1.75	9614	1180	617	1418
10	6	4	9	6	3	1721.8	427.50	0.81	9816	1251	631	1506
10	6	4	10	6	5	1746.1	427.50	0.88	9782	1228	626	1481
10	6	4	11	6	5	1772.8	427.50	1.01	9821	1212	621	1468
10	7	3	9	7	2	1721.8	533.17	0.39	9955	1290	635	1565
10	7	3	10	7	4	1746.1	533.17	0.72	9942	1266	631	1540
10	7	3	11	7	4	1772.8	533.17	0.52	9983	1248	625	1523
10	8	2	9	8	1	1721.8	654.83	0.15	9988	1333	638	1630
10	8	2	10	8	3	1746.1	654.83	0.53	10021	1309	635	1600
10	8	2	11	8	3	1772.8	654.83	0.23	10077	1289	630	1580
10	9	1	9	9	0	1721.9	792.35	0.04	9815	1378	642	1696
10	9	1	10	9	2	1746.1	792.35	0.35	9958	1354	639	1664
10	9	1	11	9	2	1772.8	792.35	0.08	10060	1335	635	1642
10	10	0	10	10	1	1746.1	945.60	0.20	9569	1402	644	1731
10	10	0	11	10	1	1772.8	945.60	0.02	9833	1380	641	1703
11	1	11	10	1	10	1720.4	162.85	4.92	8797	1118	612	1304
11	1	11	11	1	10	1756.6	162.85	0.08	8719	1093	602	1289
11	1	11	12	1	12	1774.1	162.85	5.54	8731	1091	600	1290
11	2	10	10	2	9	1719.5	192.82	4.15	8928	1117	609	1314
11	2	10	11	2	9	1747.7	192.82	0.27	8816	1099	602	1302
11	2	10	12	2	11	1775.1	192.82	4.70	8793	1092	598	1303
11	3	9	10	3	8	1719.3	234.15	3.26	9145	1130	610	1339
11	3	9	11	3	0	1740.2	234.15	0.51	9011	1114	605	1327
11	3	9	12	3	10	1775.3	234.15	3.72	9007	1106	600	1327
11	4	8	10	4	7	1719.4	291.26	2.32	9386	1152	613	1374
11	4	8	11	4	7	1746.1	291.26	0.69	9263	1135	607	1364
11	4	8	12	4	9	1775.3	291.26	2.68	9253	1126	603	1360
11	5	7	10	5	6	1719.4	364.64	1.49	9614	1180	617	1418
11	5	7	11	5	6	1746.1	364.64	0.76	9503	1162	611	1404
11	5	7	12	5	8	1775.3	364.64	1.75	9490	1151	607	1400
11	6	6	10	6	5	1719.4	454.21	0.86	9821	1212	621	1468
11	6	6	11	6	5	1746.1	454.21	0.71	9727	1194	615	1453
11	6	6	12	6	7	1775.2	454.21	1.04	9713	1182	611	1445
11	7	5	10	7	4	1719.4	559.87	0.44	9983	1248	625	1523
11	7	5	11	7	4	1746.1	559.87	0.58	9911	1229	620	1503
11	7	5	12	7	6	1775.2	559.87	0.55	9898	1217	615	1494
11	8	4	10	8	3	1719.4	681.51	0.19	10077	1289	630	1580
11	8	4	11	8	3	1746.1	681.51	0.42	10041	1268	625	1559
11	8	4	12	8	5	1775.2	681.51	0.26	10041	1254	621	1547
11	9	3	10	9	2	1719.4	819.02	0.07	10060	1335	635	1642
11	9	3	11	9	2	1746.1	819.02	0.28	10084	1312	631	1616

11	9	3	12	9	4	1775.2	819.02	0.11	10110	1295	627	1599
11	10	2	10	10	1	1719.4	972.25	0.02	9833	1380	641	1703
11	10	2	11	10	1	1746.1	972.25	0.16	9984	1358	637	1675
11	10	2	12	10	3	1775.2	972.25	0.04	10068	1339	633	1656
12	0	12	11	0	11	1717.6	187.25	4.79	8617	1085	599	1284
12	0	12	13	0	13	1776.9	187.25	5.37	8404	1068	591	1289
12	1	11	11	1	10	1716.2	203.29	4.41	8595	1079	595	1292
12	1	11	12	1	12	1733.7	203.29	0.06	8534	1076	593	1292
12	1	11	13	1	12	1778.5	203.29	4.96	8281	1066	588	1298
12	2	10	11	2	9	1716.5	224.06	3.91	8808	1090	597	1305
12	2	10	12	2	11	1743.9	224.06	0.21	8595	1079	593	1306
12	2	10	13	2	11	1778.3	224.06	4.41	8500	1075	589	1314
12	3	9	11	3	8	1716.9	263.46	3.13	9002	1107	600	1328
12	3	9	12	3	10	1746.0	263.46	0.40	8806	1095	595	1325
12	3	9	13	3	10	1777.8	263.46	3.54	8742	1090	591	1332
12	4	8	11	4	7	1716.9	320.44	2.26	9254	1126	603	1360
12	4	8	12	4	9	1746.1	320.44	0.55	9067	1115	598	1355
12	4	8	13	4	9	1777.7	320.44	2.58	9003	1110	595	1358
12	5	7	11	5	6	1716.9	393.80	1.47	9490	1151	607	1400
12	5	7	12	5	8	1746.1	393.80	0.61	9315	1140	602	1394
12	5	7	13	5	8	1777.7	393.80	1.71	9249	1135	599	1395
12	6	6	11	6	5	1717.0	483.35	0.87	9713	1182	611	1445
12	6	6	12	6	7	1746.1	483.35	0.57	9555	1169	606	1436
12	6	6	13	6	7	1777.7	483.35	1.03	9489	1161	603	1435
12	7	5	11	7	4	1717.0	588.99	0.46	9898	1217	615	1494
12	7	5	12	7	6	1746.1	588.99	0.47	9762	1202	611	1484
12	7	5	13	7	6	1777.7	588.99	0.56	9700	1192	608	1479
12	8	4	11	8	3	1717.0	710.62	0.22	10041	1254	621	1547
12	8	4	12	8	5	1746.1	710.62	0.34	9935	1240	616	1532
12	8	4	13	8	5	1777.6	710.62	0.27	9881	1227	613	1525
12	9	3	11	9	2	1717.0	848.11	0.09	10110	1295	627	1599
12	9	3	12	9	4	1746.1	848.11	0.22	10049	1278	622	1584
12	9	3	13	9	4	1777.6	848.11	0.12	10012	1266	619	1574
12	10	2	11	10	1	1717.0	1001.33	0.03	10068	1339	633	1656
12	10	2	12	10	3	1746.1	1001.33	0.13	10078	1319	629	1634
12	10	2	13	10	3	1777.6	1001.33	0.04	10072	1305	625	1621
13	1	13	12	1	12	1715.8	221.24	4.39	8526	1074	591	1289
13	1	13	13	1	12	1760.5	221.24	0.05	8220	1064	586	1296
13	1	13	14	1	14	1778.8	221.24	4.91	8199	1061	585	1298
13	2	12	12	2	11	1714.7	253.29	3.70	8532	1075	591	1310
13	2	12	13	2	11	1749.0	253.29	0.16	8252	1070	586	1316
13	2	12	14	2	13	1779.9	253.29	4.15	8163	1069	583	1318
13	3	11	12	3	10	1714.5	295.00	2.94	8746	1090	592	1330
13	3	11	13	3	10	1746.3	295.00	0.32	8490	1084	588	1333
13	3	11	14	3	12	1780.2	295.00	3.31	8387	1083	586	1337
13	4	10	12	4	9	1714.5	352.06	2.13	9001	1110	595	1358
13	4	10	13	4	9	1746.1	352.06	0.44	8760	1103	591	1361
13	4	10	14	4	11	1780.2	352.06	2.42	8646	1100	588	1365
13	5	9	12	5	8	1714.5	425.39	1.41	9249	1135	599	1395
13	5	9	13	5	8	1746.1	425.39	0.48	9020	1127	595	1394
13	5	9	14	5	10	1780.1	425.39	1.62	8905	1122	592	1396
13	6	8	12	6	7	1714.5	514.92	0.85	9489	1161	603	1435
13	6	8	13	6	7	1746.1	514.92	0.45	9276	1154	599	1432
13	6	8	14	6	9	1780.1	514.92	0.99	9163	1148	597	1432

13	7	7	12	7	6	1714.5	620.55	0.46	9700	1192	608	1479
13	7	7	13	7	6	1746.1	620.55	0.37	9508	1183	604	1473
13	7	7	14	7	8	1780.1	620.55	0.55	9399	1177	602	1471
13	8	6	12	8	5	1714.6	742.16	0.23	9881	1227	613	1525
13	8	6	13	8	5	1746.1	742.16	0.27	9714	1215	610	1517
13	8	6	14	8	7	1780.1	742.16	0.27	9612	1207	607	1512
13	9	5	12	9	4	1714.6	879.64	0.10	10012	1266	619	1574
13	9	5	13	9	4	1746.1	879.64	0.18	9879	1253	615	1562
13	9	5	14	9	6	1780.1	879.64	0.12	9790	1242	613	1554
13	10	4	12	10	3	1714.6	1032.84	0.04	10072	1305	625	1621
13	10	4	13	10	3	1746.1	1032.84	0.10	9988	1290	622	1607
13	10	4	14	10	5	1780.0	1032.84	0.05	9919	1279	619	1597
14	0	14	13	0	13	1713.0	251.16	4.10	8078	1061	584	1299
14	0	14	15	0	15	1781.5	251.16	4.57	7663	1056	579	1309
14	1	13	13	1	12	1711.3	270.46	3.73	7881	1059	581	1311
14	1	13	14	1	14	1729.5	270.46	0.04	7807	1056	580	1309
14	1	13	15	1	14	1783.3	270.46	4.16	7368	1052	577	1316
14	2	12	13	2	11	1711.4	290.96	3.33	8072	1070	582	1324
14	2	12	14	2	13	1742.3	290.96	0.12	7815	1066	580	1324
14	2	12	15	2	13	1783.4	290.96	3.73	7557	1062	579	1331
14	3	11	13	3	10	1711.9	329.34	2.70	8378	1081	585	1337
14	3	11	14	3	12	1745.8	329.34	0.25	8090	1077	583	1341
14	3	11	15	3	12	1782.8	329.34	3.03	7932	1073	581	1343
14	4	10	13	4	9	1712.0	386.13	1.98	8647	1100	588	1365
14	4	10	14	4	11	1746.1	386.13	0.35	8359	1096	586	1367
14	4	10	15	4	11	1782.6	386.13	2.23	8209	1090	584	1368
14	5	9	13	5	8	1712.1	459.41	1.32	8905	1122	592	1396
14	5	9	14	5	10	1746.1	459.41	0.38	8628	1117	589	1398
14	5	9	15	5	10	1782.6	459.41	1.50	8480	1113	587	1398
14	6	8	13	6	7	1712.1	548.92	0.81	9163	1148	597	1432
14	6	8	14	6	9	1746.1	548.92	0.36	8902	1141	593	1430
14	6	8	15	6	9	1782.5	548.92	0.92	8751	1136	591	1429
14	7	7	13	7	6	1712.1	654.53	0.45	9399	1177	602	1471
14	7	7	14	7	8	1746.1	654.53	0.29	9157	1169	599	1468
14	7	7	15	7	8	1782.5	654.53	0.52	9009	1162	596	1463
14	8	6	13	8	5	1712.1	776.13	0.22	9612	1207	607	1512
14	8	6	14	8	7	1746.1	776.13	0.21	9391	1199	605	1506
14	8	6	15	8	7	1782.5	776.13	0.26	9248	1192	601	1499
14	9	5	13	9	4	1712.1	913.59	0.10	9790	1242	613	1554
14	9	5	14	9	6	1746.1	913.59	0.14	9599	1231	610	1545
14	9	5	15	9	6	1782.5	913.59	0.12	9465	1223	607	1538
14	10	4	13	10	3	1712.2	1066.77	0.04	9919	1279	619	1597
14	10	4	14	10	5	1746.1	1066.77	0.08	9766	1267	615	1586
14	10	4	15	10	5	1782.5	1066.77	0.05	9646	1257	613	1575
15	1	15	14	1	14	1711.1	288.85	3.66	7778	1056	580	1308
15	1	15	15	1	14	1764.9	288.85	0.04	7325	1051	577	1315
15	1	15	16	1	16	1783.4	288.85	4.07	7296	1050	577	1313
15	2	14	14	2	13	1709.9	323.33	3.06	7713	1064	579	1324
15	2	14	15	2	13	1751.0	323.33	0.10	7305	1059	578	1330
15	2	14	16	2	15	1784.7	323.33	3.41	7204	1059	578	1329
15	3	13	14	3	12	1709.6	365.61	2.44	7950	1073	581	1344
15	3	13	15	3	12	1746.5	365.61	0.20	7616	1069	579	1345
15	3	13	16	3	14	1785.1	365.61	2.73	7452	1067	578	1343
15	4	12	14	4	11	1709.6	422.62	1.80	8210	1090	584	1368

15	4	12	15	4	11	1746.1	422.62	0.27	7894	1085	582	1369
15	4	12	16	4	13	1785.0	422.62	2.02	7717	1082	581	1367
15	5	11	14	5	10	1709.6	495.88	1.21	8480	1113	587	1398
15	5	11	15	5	10	1746.1	495.88	0.30	8176	1106	585	1397
15	5	11	16	5	12	1785.0	495.88	1.37	7998	1102	584	1393
15	6	10	14	6	9	1709.7	585.36	0.74	8751	1136	591	1429
15	6	10	15	6	9	1746.1	585.36	0.28	8456	1131	589	1427
15	6	10	16	6	11	1785.0	585.36	0.85	8277	1126	588	1424
15	7	9	14	7	8	1709.7	690.95	0.42	9009	1162	596	1463
15	7	9	15	7	8	1746.1	690.95	0.23	8727	1156	593	1458
15	7	9	16	7	10	1785.0	690.95	0.48	8550	1151	592	1455
15	8	8	14	8	7	1709.7	812.53	0.21	9248	1192	601	1499
15	8	8	15	8	7	1746.1	812.53	0.17	8984	1184	598	1493
15	8	8	16	8	9	1784.9	812.53	0.25	8811	1179	597	1488
15	9	7	14	9	6	1709.7	949.98	0.10	9465	1223	607	1538
15	9	7	15	9	6	1746.1	949.98	0.11	9224	1215	604	1529
15	9	7	16	9	8	1784.9	949.98	0.12	9057	1209	602	1521
15	10	6	14	10	5	1709.7	1103.14	0.04	9646	1257	613	1575
15	10	6	15	10	5	1746.1	1103.14	0.07	9437	1246	610	1565
15	10	6	16	10	7	1784.9	1103.14	0.05	9279	1239	608	1556
16	0	16	15	0	15	1708.5	324.12	3.30		1051	577	1313
16	0	16	17	0	17	1786.0	324.12	3.66		1047	576	1315
16	1	15	15	1	14	1706.5	347.33	2.94		1050	576	1316
16	1	15	16	1	16	1724.9	347.33	0.02		1049	576	1314
16	1	15	17	1	16	1788.1	347.33	3.27		1049	575	1316
16	2	14	15	2	13	1706.3	368.04	2.63		1057	577	1331
16	2	14	16	2	15	1740.0	368.04	0.07		1056	576	1329
16	2	14	17	2	15	1788.5	368.04	2.94		1055	576	1331
16	3	13	15	3	12	1707.0	405.13	2.16		1069	579	1344
16	3	13	16	3	14	1745.6	405.13	0.15		1066	578	1341
16	3	13	17	3	14	1787.7	405.13	2.42		1065	578	1344
16	4	12	15	4	11	1707.1	461.58	1.60		1082	581	1367
16	4	12	16	4	13	1746.1	461.58	0.21		1079	580	1362
16	4	12	17	4	13	1787.5	461.58	1.80		1081	580	1363
16	5	11	15	5	10	1707.2	534.78	1.09		1102	584	1393
16	5	11	16	5	12	1746.1	534.78	0.23		1098	583	1390
16	5	11	17	5	12	1787.4	534.78	1.22		1098	583	1388
16	6	10	15	6	9	1707.2	624.23	0.67		1126	588	1424
16	6	10	16	6	11	1746.1	624.23	0.22		1121	586	1418
16	6	10	17	6	11	1787.4	624.23	0.76		1119	586	1415
16	7	9	15	7	8	1707.2	729.80	0.38		1151	592	1455
16	7	9	16	7	10	1746.1	729.80	0.18		1146	590	1449
16	7	9	17	7	10	1787.4	729.80	0.44		1143	590	1444
16	8	8	15	8	7	1707.3	851.37	0.20		1179	597	1488
16	8	8	16	8	9	1746.1	851.37	0.13		1173	595	1480
16	8	8	17	8	9	1787.4	851.37	0.23		1169	594	1474
16	9	7	15	9	6	1707.3	988.79	0.09		1209	602	1521
16	9	7	16	9	8	1746.1	988.79	0.09		1200	600	1513
16	9	7	17	9	8	1787.4	988.79	0.11		1195	599	1505
16	10	6	15	10	5	1707.3	1141.95	0.04		1239	608	1556
16	10	6	16	10	7	1746.1	1141.95	0.05		1230	606	1547
16	10	6	17	10	7	1787.3	1141.95	0.05		1224	604	1538
17	1	17	16	1	16	1706.6	365.65	2.86		1048	576	1314
17	1	17	17	1	16	1769.8	365.65	0.02		1048	575	1317

17	1	17	18	1	18	1787.9	365.65	3.18	1046	575	1316
17	2	16	16	2	15	1705.1	402.90	2.37	1056	576	1328
17	2	16	17	2	15	1753.6	402.50	0.06	1055	576	1327
17	2	16	18	2	17	1789.4	402.90	2.64	1055	576	1327
17	3	15	16	3	14	1704.7	445.98	1.89	1066	578	1341
17	3	15	17	3	14	1746.9	445.98	0.12	1064	577	1339
17	3	15	18	3	16	1789.9	445.98	2.11	1067	578	1342
17	4	14	16	4	13	1704.7	502.95	1.40	1080	580	1363
17	4	14	17	4	13	1746.1	502.95	0.16	1081	580	1360
17	4	14	18	4	15	1789.9	502.95	1.57	1081	580	1362
17	5	13	16	5	12	1704.8	576.12	0.96	1098	583	1388
17	5	13	17	5	12	1746.1	576.12	0.18	1098	582	1384
17	5	13	18	5	14	1789.9	576.12	1.07	1099	582	1383
17	6	12	16	6	11	1704.8	665.54	0.60	1119	586	1415
17	6	12	17	6	11	1746.1	665.54	0.17	1116	585	1409
17	6	12	18	6	13	1789.8	665.54	0.67	1116	585	1409
17	7	11	16	7	10	1704.8	771.09	0.34	1143	590	1444
17	7	11	17	7	10	1746.1	771.09	0.14	1139	589	1438
17	7	11	18	7	12	1789.8	771.09	0.39	1138	589	1435
17	8	10	16	8	9	1704.8	892.63	0.18	1169	594	1474
17	8	10	17	8	9	1746.1	892.63	0.10	1164	593	1467
17	8	10	18	8	11	1789.8	892.63	0.20	1161	593	1463
17	9	9	16	9	8	1704.8	1030.05	0.09	1195	599	1505
17	9	9	17	9	8	1746.1	1030.05	0.07	1189	597	1497
17	9	9	18	9	10	1789.8	1030.05	0.10	1186	597	1492
17	10	8	16	10	7	1704.9	1183.18	0.04	1224	604	1538
17	10	8	17	10	7	1746.1	1183.18	0.04	1216	602	1527
17	10	8	18	10	9	1789.8	1183.18	0.04	1212	601	1523
18	0	18	17	0	17	1704.0	406.09	2.50	1045	575	1313
18	0	18	19	0	19	1790.5	406.09	2.77	1048	574	1317
18	1	17	17	1	16	1701.7	433.78	2.18	1052	575	1320
18	1	17	18	1	18	1719.8	433.78	0.02	1050	574	1318
18	1	17	19	1	18	1792.9	433.78	2.42	1057	575	1329
18	2	16	17	2	15	1701.2	455.28	1.95	1059	576	1335
18	2	16	18	2	17	1737.1	455.28	0.04	1060	576	1334
18	2	16	19	2	17	1793.5	455.28	2.17	1067	576	1344
18	3	15	17	3	14	1702.0	490.89	1.62	1066	577	1341
18	3	15	18	3	16	1745.0	490.89	0.09	1068	577	1345
18	3	15	19	3	16	1792.8	490.89	1.81	1072	577	1354
18	4	14	17	4	13	1702.2	546.84	1.21	1081	580	1362
18	4	14	18	4	15	1746.1	546.84	0.12	1082	580	1363
18	4	14	19	4	15	1792.4	546.84	1.35	1085	579	1368
18	5	13	17	5	12	1702.3	619.90	0.83	1099	582	1383
18	5	13	18	5	14	1746.1	619.90	0.14	1099	582	1383
18	5	13	19	5	14	1792.3	619.90	0.93	1100	582	1387
18	6	12	17	6	11	1702.4	709.29	0.52	1116	585	1409
18	6	12	18	6	13	1746.1	709.29	0.13	1116	585	1407
18	6	12	19	6	13	1792.3	709.29	0.58	1118	585	1411
18	7	11	17	7	10	1702.4	814.81	0.30	1138	589	1435
18	7	11	18	7	12	1746.1	814.81	0.11	1136	588	1433
18	7	11	19	7	12	1792.3	814.81	0.34	1138	588	1437
18	8	10	17	8	9	1702.4	936.34	0.16	1161	593	1463
18	8	10	18	8	11	1746.1	936.34	0.08	1159	592	1460
18	8	10	19	8	11	1792.2	936.34	0.18	1159	592	1462

18	9	9	17	9	8	1702.4	1073.73	0.08	1186	597	1492
18	9	9	18	9	10	1746.1	1073.73	0.05	1183	596	1488
18	9	9	19	9	10	1792.2	1073.73	0.09	1183	596	1489
18	10	8	17	10	7	1702.4	1226.86	0.03	1212	601	1523
18	10	8	18	10	9	1746.1	1226.86	0.03	1207	601	1517
18	10	8	19	10	9	1792.2	1226.86	0.04	1206	600	1516
19	1	19	18	1	18	1702.0	451.60	2.11	1049	574	1315
19	1	19	19	1	18	1775.0	451.60	0.01	1056	575	1330
19	1	19	20	1	20	1792.5	451.60	2.35	1054	575	1327
19	2	18	18	2	17	1700.4	491.93	1.73	1060	576	1335
19	2	18	19	2	17	1756.9	491.93	0.03	1067	576	1343
19	2	18	20	2	19	1794.2	491.93	1.92	1067	576	1343
19	3	17	18	3	16	1699.8	536.09	1.38	1071	578	1349
19	3	17	19	3	16	1747.6	536.09	0.07	1075	577	1355
19	3	17	20	3	18	1794.8	536.09	1.54	1079	577	1360
19	4	16	18	4	15	1699.8	593.07	1.03	1085	579	1369
19	4	16	19	4	15	1746.2	593.07	0.09	1087	579	1372
19	4	16	20	4	17	1794.8	593.07	1.15	1092	579	1377
19	5	15	18	5	14	1699.9	666.12	0.71	1100	582	1387
19	5	15	19	5	14	1746.1	666.12	0.10	1101	582	1390
19	5	15	20	5	16	1794.8	666.12	0.79	1105	581	1395
19	6	14	18	6	13	1699.9	755.47	0.44	1118	585	1411
19	6	14	19	6	13	1746.1	755.47	0.10	1119	584	1414
19	6	14	20	6	15	1794.7	755.47	0.50	1122	584	1418
19	7	13	18	7	12	1699.9	860.97	0.26	1138	588	1437
19	7	13	19	7	12	1746.1	860.97	0.08	1139	588	1438
19	7	13	20	7	14	1794.7	860.97	0.29	1142	587	1441
19	8	12	18	8	11	1700.0	982.48	0.14	1159	592	1462
19	8	12	19	8	11	1746.1	982.48	0.06	1159	591	1462
19	8	12	20	8	13	1794.7	982.48	0.16	1162	591	1464
19	9	11	18	9	10	1700.0	1119.86	0.07	1183	596	1489
19	9	11	19	9	10	1746.1	1119.86	0.04	1182	594	1487
19	9	11	20	9	12	1794.7	1119.86	0.08	1183	594	1488
19	10	10	18	10	9	1700.0	1272.97	0.03	1206	600	1516
19	10	10	19	10	9	1746.1	1272.97	0.02	1205	599	1514
19	10	10	20	10	11	1794.7	1272.97	0.03	1206	598	1513
20	0	20	19	0	19	1699.5	497.05	1.79	1056	574	1328
20	0	20	21	0	21	1794.9	497.05	1.98	1063	575	1338
20	1	19	19	1	18	1697.0	529.65	1.52	1064	575	1342
20	1	19	20	1	20	1714.4	529.65	0.01	1063	575	1339
20	1	19	21	1	20	1797.5	529.65	1.70	1073	575	1346
20	2	18	19	2	17	1696.2	552.62	1.36	1075	577	1352
20	2	18	20	2	19	1733.5	552.62	0.02	1075	576	1352
20	2	18	21	2	19	1798.5	552.62	1.51	1080	576	1351
20	3	17	19	3	16	1696.9	586.72	1.14	1081	576	1364
20	3	17	20	3	18	1744.2	586.72	0.05	1085	577	1366
20	3	17	21	3	18	1797.8	586.72	1.27	1087	576	1365
20	4	16	19	4	15	1697.3	641.91	0.86	1092	579	1378
20	4	16	20	4	17	1746.0	641.91	0.07	1095	578	1381
20	4	16	21	4	17	1797.3	641.91	0.96	1098	578	1380
20	5	15	19	5	14	1697.4	714.79	0.59	1105	581	1395
20	5	15	20	5	16	1746.1	714.79	0.08	1109	581	1399
20	5	15	21	5	16	1797.2	714.79	0.66	1111	581	1397
20	6	14	19	6	13	1697.5	804.10	0.37	1122	584	1418

20	6	14	20	6	15	1746.1	804.10	0.07	1125	583	1421
20	6	14	21	6	15	1797.2	804.10	0.42	1126	583	1419
20	7	13	19	7	12	1697.5	909.57	0.22	1142	587	1441
20	7	13	20	7	14	1746.1	909.57	0.06	1144	586	1442
20	7	13	21	7	14	1797.1	909.57	0.24	1143	586	1441
20	8	12	19	8	11	1697.5	1031.05	0.12	1162	591	1464
20	8	12	20	8	13	1746.1	1031.05	0.04	1163	590	1464
20	8	12	21	8	13	1797.1	1031.05	0.13	1162	589	1462
20	9	11	19	9	10	1697.5	1168.42	0.06	1183	594	1488
20	9	11	20	9	12	1746.1	1168.42	0.03	1183	593	1488
20	9	11	21	9	12	1797.1	1168.42	0.06	1182	593	1485
20	10	10	19	10	9	1697.5	1321.52	0.03	1206	598	1513
20	10	10	20	10	11	1746.1	1321.52	0.02	1204	597	1512
20	10	10	21	10	11	1797.1	1321.52	0.03	1202	597	1510
21	1	21	20	1	20	1697.4	546.68	1.48	1062	574	1337
21	1	21	21	1	20	1780.5	546.68	0.01	1072	575	1344
21	1	21	22	1	22	1797.1	546.68	1.64	1070	574	1344
21	2	20	20	2	19	1695.7	590.38	1.19	1075	575	1350
21	2	20	21	2	19	1760.8	590.38	0.02	1079	576	1349
21	2	20	22	2	21	1798.8	590.38	1.32	1078	575	1348
21	3	19	20	3	18	1695.0	635.92	0.95	1084	577	1364
21	3	19	21	3	18	1748.6	635.92	0.04	1087	576	1363
21	3	19	22	3	20	1799.7	635.92	1.05	1086	576	1359
21	4	18	20	4	17	1694.9	692.99	0.71	1096	578	1381
21	4	18	21	4	17	1746.3	692.99	0.05	1098	578	1378
21	4	18	22	4	19	1799.7	692.99	0.79	1098	578	1376
21	5	17	20	5	16	1695.0	765.90	0.49	1111	581	1397
21	5	17	21	5	16	1746.1	765.90	0.06	1111	580	1396
21	5	17	22	5	18	1799.7	765.90	0.55	1111	580	1392
21	6	16	20	6	15	1695.0	855.16	0.31	1126	583	1419
21	6	16	21	6	15	1746.1	855.16	0.06	1126	583	1416
21	6	16	22	6	17	1799.6	855.16	0.35	1127	583	1411
21	7	15	20	7	14	1695.1	960.60	0.18	1143	586	1441
21	7	15	21	7	14	1746.1	960.60	0.05	1143	586	1438
21	7	15	22	7	16	1799.6	960.60	0.20	1143	585	1431
21	8	14	20	8	13	1695.1	1002.07	0.10	1162	589	1462
21	8	14	21	8	13	1746.1	1002.07	0.03	1161	589	1458
21	8	14	22	8	15	1799.6	1002.07	0.11	1161	589	1452
21	9	13	20	9	12	1695.1	1219.42	0.05	1182	593	1485
21	9	13	21	9	12	1746.1	1219.42	0.02	1180	593	1481
21	9	13	22	9	14	1799.5	1219.42	0.05	1179	592	1474
21	10	12	20	10	11	1695.1	1372.51	0.02	1202	597	1510
21	10	12	21	10	11	1746.1	1372.51	0.01	1200	596	1505
21	10	12	22	10	13	1799.5	1372.51	0.02	1197	596	1497
22	0	22	21	0	21	1695.0	596.99	1.22	1071	574	1344
22	0	22	23	0	23	1799.4	596.99	1.35	1073	574	1340
22	1	21	21	1	20	1692.4	634.81	1.01	1074	575	1340
22	1	21	22	1	22	1708.9	634.81	0.01	1073	574	1339
22	1	21	23	1	22	1802.1	634.81	1.12	1073	574	1326
22	2	20	21	2	19	1691.2	659.99	0.89	1079	575	1339
22	2	20	22	2	21	1729.2	659.99	0.01	1077	575	1338
22	2	20	23	2	21	1803.5	659.99	0.99	1077	573	1326
22	3	19	21	3	18	1691.8	692.71	0.75	1088	576	1358
22	3	19	22	3	20	1742.9	692.71	0.03	1086	576	1350

22	3	19	23	3	20	1802.9	692.71	0.84	1085	576	1344
22	4	18	21	4	17	1692.4	746.85	0.57	1097	578	1375
22	4	18	22	4	19	1745.9	746.85	0.04	1096	577	1368
22	4	18	23	4	19	1802.3	746.85	0.64	1095	577	1361
22	5	17	21	5	16	1692.5	819.47	0.40	1111	580	1392
22	5	17	22	5	18	1746.1	819.47	0.04	1110	579	1384
22	5	17	23	5	18	1802.1	819.47	0.44	1109	579	1375
22	6	16	21	6	15	1692.6	908.66	0.25	1127	583	1411
22	6	16	22	6	17	1746.1	908.66	0.04	1126	582	1403
22	6	16	23	6	17	1802.0	908.66	0.28	1124	582	1396
22	7	15	21	7	14	1692.6	1014.07	0.15	1143	585	1431
22	7	15	22	7	16	1746.1	1014.07	0.03	1142	585	1423
22	7	15	23	7	16	1802.0	1014.07	0.17	1140	584	1416
22	8	14	21	8	13	1692.6	1135.52	0.08	1161	589	1452
22	8	14	22	8	15	1746.1	1135.52	0.02	1158	588	1444
22	8	14	23	8	15	1802.0	1135.52	0.09	1156	587	1437
22	9	13	21	9	12	1692.7	1272.86	0.04	1179	592	1474
22	9	13	22	9	14	1746.1	1272.86	0.02	1176	592	1466
22	9	13	23	9	14	1802.0	1272.86	0.04	1174	591	1458
22	10	12	21	10	11	1692.7	1425.94	0.02	1197	596	1497
22	10	12	22	10	13	1746.1	1425.94	0.01	1194	595	1488
22	10	12	23	10	13	1802.0	1425.94	0.02	1192	594	1480
23	1	23	22	1	22	1692.9	650.85	0.98	1073	575	1341
23	1	23	23	1	22	1786.1	650.85	0.01	1073	574	1329
23	1	23	24	1	24	1801.6	650.85	1.09	1071	574	1330
23	2	22	22	2	21	1691.0	698.20	0.78	1076	575	1335
23	2	22	23	2	21	1765.3	698.20	0.01	1076	573	1324
23	2	22	24	2	23	1803.5	698.20	0.86	1075	573	1321
23	3	21	22	3	20	1690.1	745.44	0.61	1086	576	1346
23	3	21	23	3	20	1750.2	745.44	0.02	1085	574	1335
23	3	21	24	3	22	1804.5	745.44	0.68	1085	573	1329
23	4	20	22	4	19	1690.0	802.70	0.46	1096	577	1360
23	4	20	23	4	19	1746.4	802.70	0.03	1094	576	1351
23	4	20	24	4	21	1804.6	802.70	0.51	1095	575	1340
23	5	19	22	5	18	1690.1	875.47	0.32	1109	579	1375
23	5	19	23	5	18	1746.1	875.47	0.03	1108	579	1368
23	5	19	24	5	20	1804.6	875.47	0.36	1107	577	1360
23	6	18	22	6	17	1690.2	964.61	0.20	1124	582	1396
23	6	18	23	6	17	1746.1	964.61	0.03	1122	581	1386
23	6	18	24	6	19	1804.5	964.61	0.23	1119	579	1378
23	7	17	22	7	16	1690.2	1069.99	0.12	1140	584	1416
23	7	17	23	7	16	1746.1	1069.99	0.02	1137	583	1406
23	7	17	24	7	18	1804.5	1069.99	0.13	1134	581	1397
23	8	16	22	8	15	1690.2	1191.42	0.06	1156	587	1437
23	8	16	23	8	15	1746.1	1191.42	0.02	1153	586	1427
23	8	16	24	8	17	1804.4	1191.42	0.07	1151	585	1418
23	9	15	22	9	14	1690.2	1328.75	0.03	1174	591	1458
23	9	15	23	9	14	1746.1	1328.75	0.01	1171	589	1448
23	9	15	24	9	16	1804.4	1328.75	0.04	1167	588	1439
23	10	14	22	10	13	1690.2	1481.83	0.01	1192	594	1480
23	10	14	23	10	13	1746.1	1481.83	0.01	1188	593	1469
23	10	14	24	10	15	1804.4	1481.83	0.02	1184	592	1460
24	0	24	23	0	23	1690.5	705.92	0.78	1072	574	1327
24	0	24	25	0	25	1803.9	705.92	0.87	1073	571	1316

24	1	23	23	1	22	1687.8	749.12	0.63	1075	571	1312
24	1	23	24	1	24	1703.3	749.12	0.00	1074	572	1314
24	1	23	25	1	24	1806.6	749.12	0.71	1076	568	1296
24	2	22	23	2	21	1686.2	777.26	0.55	1078	570	1309
24	2	22	24	2	23	1724.5	777.26	0.01	1077	570	1306
24	2	22	25	2	23	1808.4	777.26	0.62	1078	567	1296
24	3	21	23	3	20	1686.7	808.93	0.47	1087	572	1327
24	3	21	24	3	22	1741.0	808.93	0.01	1085	571	1320
24	3	21	25	3	22	1808.1	808.93	0.53	1087	569	1315
24	4	20	23	4	19	1687.4	861.68	0.36	1095	574	1342
24	4	20	24	4	21	1745.7	861.68	0.02	1094	573	1331
24	4	20	25	4	21	1807.2	861.68	0.40	1094	571	1330
24	5	19	23	5	18	1687.6	933.94	0.25	1108	577	1360
24	5	19	24	5	20	1746.1	933.94	0.02	1105	576	1350
24	5	19	25	5	20	1807.0	933.94	0.28	1106	574	1344
24	6	18	23	6	17	1687.7	1023.01	0.16	1119	579	1378
24	6	18	24	6	19	1746.1	1023.01	0.02	1118	578	1368
24	6	18	25	6	19	1806.9	1023.01	0.18	1119	576	1363
24	7	17	23	7	16	1687.7	1128.35	0.09	1134	581	1397
24	7	17	24	7	18	1746.1	1128.35	0.02	1133	580	1388
24	7	17	25	7	18	1806.9	1128.35	0.11	1133	579	1383
24	8	16	23	8	15	1687.8	1249.76	0.05	1151	585	1418
24	8	16	24	8	17	1746.1	1249.76	0.01	1149	583	1408
24	8	16	25	8	17	1806.9	1249.76	0.06	1149	582	1403
24	9	15	23	9	14	1687.8	1387.08	0.03	1167	588	1439
24	9	15	24	9	16	1746.1	1387.08	0.01	1165	586	1429
24	9	15	25	9	16	1806.9	1387.08	0.03	1165	585	1424
24	10	14	23	10	13	1687.8	1540.16	0.01	1184	592	1460
24	10	14	24	10	15	1746.1	1540.16	0.01	1181	590	1450
24	10	14	25	10	15	1806.9	1540.16	0.01	1181	589	1445
25	1	25	24	1	24	1688.3	764.10	0.62	1071	571	1314
25	1	25	25	1	24	1791.7	764.10	0.00	1075	568	1298
25	1	25	26	1	26	1806.1	764.10	0.69	1074	569	1298
25	2	24	24	2	23	1686.4	815.34	0.48	1075	570	1304
25	2	24	25	2	23	1770.3	815.34	0.00	1077	567	1296
25	2	24	26	2	25	1800.1	815.34	0.54	1078	567	1295
25	3	23	24	3	22	1685.3	864.62	0.38	1086	570	1315
25	3	23	25	3	22	1752.4	864.62	0.01	1086	568	1308
25	3	23	26	3	24	1809.3	864.62	0.42	1088	567	1305
25	4	22	24	4	21	1685.1	922.23	0.28	1094	572	1328
25	4	22	25	4	21	1746.7	922.23	0.01	1093	570	1322
25	4	22	26	4	23	1809.5	922.23	0.32	1095	569	1319
25	5	21	24	5	20	1685.2	994.83	0.20	1106	574	1344
25	5	21	25	5	20	1746.1	994.83	0.02	1105	572	1339
25	5	21	26	5	22	1809.5	994.83	0.22	1106	570	1336
25	6	20	24	6	19	1685.3	1083.85	0.13	1119	576	1363
25	6	20	25	6	19	1746.1	1083.85	0.02	1119	574	1356
25	6	20	26	6	21	1809.4	1083.85	0.14	1120	573	1353
25	7	19	24	7	18	1685.3	1189.15	0.07	1133	579	1383
25	7	19	25	7	18	1746.1	1189.15	0.01	1132	577	1376
25	7	19	26	7	20	1809.3	1189.15	0.08	1133	575	1372
25	8	18	24	8	17	1685.3	1310.55	0.04	1149	582	1403
25	8	18	25	8	17	1746.1	1310.55	0.01	1147	580	1395
25	8	18	26	8	19	1809.3	1310.55	0.05	1148	579	1393

25	9	17	24	9	16	1685.3	1447.86	0.02	1165	585	1424
25	9	17	25	9	16	1746.1	1447.86	0.01	1163	584	1416
25	9	17	26	9	16	1809.3	1447.86	0.02	1163	582	1413
25	10	16	24	10	15	1685.3	1600.94	0.01	1181	589	1445
25	10	16	25	10	15	1746.1	1600.94	0.00	1178	588	1437
25	10	16	26	10	17	1809.3	1600.94	0.01	1178	586	1434
26	0	26	25	0	25	1686.0	823.84	0.48	1072	569	1298
26	0	26	27	0	27	1808.4	823.84	0.54	1075	566	1290
26	1	25	25	1	24	1683.3	872.46	0.38	1075	566	1291
26	1	25	26	1	26	1697.8	872.46	0.00	1074	567	1292
26	1	25	27	1	26	1811.1	872.46	0.42	1078	563	1281
26	2	24	25	2	23	1681.4	904.31	0.33	1081	564	1288
26	2	24	26	2	25	1719.2	904.31	0.00	1080	565	1287
26	2	24	27	2	25	1813.3	904.31	0.36	1080	560	1275
26	3	23	25	3	22	1681.6	935.42	0.28	1090	566	1306
26	3	23	26	3	24	1738.5	935.42	0.01	1089	565	1301
26	3	23	27	3	24	1813.2	935.42	0.31	1091	562	1292
26	4	22	25	4	21	1682.5	986.48	0.22	1096	568	1322
26	4	22	26	4	23	1745.3	986.48	0.01	1097	567	1315
26	4	22	27	4	23	1812.3	986.48	0.24	1099	565	1310
26	5	21	25	5	20	1682.7	1058.23	0.15	1106	571	1336
26	5	21	26	5	22	1746.1	1058.23	0.01	1107	569	1331
26	5	21	27	5	22	1811.9	1058.23	0.17	1108	567	1327
26	6	20	25	6	19	1682.8	1147.14	0.10	1120	573	1353
26	6	20	26	6	21	1746.1	1147.14	0.01	1118	571	1350
26	6	20	27	6	21	1811.8	1147.14	0.11	1118	569	1345
26	7	19	25	7	18	1682.9	1252.40	0.06	1133	575	1372
26	7	19	26	7	20	1746.1	1252.40	0.01	1132	574	1370
26	7	19	27	7	20	1811.8	1252.40	0.06	1132	572	1364
26	8	18	25	8	17	1682.9	1373.78	0.03	1148	579	1393
26	8	18	26	8	19	1746.1	1373.78	0.01	1148	577	1390
26	8	18	27	8	19	1811.8	1373.78	0.04	1146	575	1383
26	9	17	25	9	16	1682.9	1511.09	0.02	1163	582	1413
26	9	17	26	9	18	1746.1	1511.09	0.00	1162	580	1409
26	9	17	27	9	18	1811.8	1511.09	0.02	1161	579	1403
26	10	16	25	10	15	1682.9	1664.17	0.01	1178	586	1434
26	10	16	26	10	17	1746.1	1664.17	0.00	1177	584	1429
26	10	16	27	10	17	1811.8	1664.17	0.01	1176	582	1423
27	1	27	26	1	26	1683.8	886.40	0.37	1074	567	1291
27	1	27	27	1	26	1797.2	886.40	0.00	1078	564	1282
27	1	27	28	1	28	1810.6	886.40	0.41	1077	564	1282
27	2	26	26	2	25	1681.7	941.73	0.28	1079	564	1287
27	2	26	27	2	25	1775.8	941.73	0.00	1080	561	1274
27	2	26	28	2	27	1812.8	941.73	0.32	1080	561	1273
27	3	25	26	3	24	1680.5	993.39	0.22	1089	565	1295
27	3	25	27	3	24	1755.2	993.39	0.00	1089	561	1283
27	3	25	28	3	26	1814.1	993.39	0.25	1087	560	1277
27	4	24	26	4	23	1680.2	1051.55	0.16	1097	565	1309
27	4	24	27	4	23	1747.2	1051.55	0.01	1097	563	1302
27	4	24	28	4	25	1814.4	1051.55	0.18	1094	560	1290
27	5	23	26	5	22	1680.3	1124.01	0.11	1108	567	1326
27	5	23	27	5	22	1746.2	1124.01	0.01	1107	565	1320
27	5	23	28	5	24	1814.4	1124.01	0.13	1106	563	1308
27	6	22	26	6	21	1680.4	1212.87	0.07	1118	569	1345

27	6	22	27	6	21	1746.1	1212.87	0.01	1118	568	1338
27	6	22	28	6	23	1814.3	1212.87	0.08	1117	565	1328
27	7	21	26	7	20	1680.4	1318.10	0.04	1132	572	1364
27	7	21	27	7	20	1746.1	1318.10	0.01	1132	570	1356
27	7	21	28	7	22	1814.2	1318.10	0.05	1130	568	1347
27	8	20	26	8	19	1680.4	1439.46	0.02	1146	575	1383
27	8	20	27	8	19	1746.1	1439.46	0.00	1146	573	1376
27	8	20	28	3	21	1814.2	1439.46	0.03	1143	571	1367
27	9	19	26	9	18	1680.4	1576.77	0.01	1161	579	1403
27	9	19	27	9	18	1746.1	1576.77	0.00	1160	577	1396
27	9	19	28	9	20	1814.2	1576.77	0.01	1157	574	1386
27	10	18	26	10	17	1680.4	1729.86	0.01	1176	582	1423
27	10	18	27	10	17	1746.1	1729.86	0.00	1175	580	1415
27	10	18	28	10	19	1814.2	1729.86	0.01	1171	578	1406
28	0	28	27	0	27	1681.5	950.76	0.28	1078	564	1280
28	0	28	29	0	29	1812.9	950.76	0.31	1078	560	1270
28	1	27	27	1	26	1678.8	1004.75	0.22	1079	560	1268
28	1	27	28	1	28	1692.3	1004.75	0.00	1079	560	1269
28	1	27	29	1	28	1815.6	1004.75	0.24	1074	555	1248
28	2	26	27	2	25	1676.6	1041.01	0.18	1076	555	1254
28	2	26	28	2	27	1713.5	1041.01	0.00	1077	556	1253
28	2	26	29	2	27	1818.0	1041.01	0.20	1066	549	1226
28	3	25	27	3	24	1676.4	1072.19	0.16	1085	556	1267
28	3	25	28	3	26	1735.3	1072.19	0.00	1082	555	1259
28	3	25	29	3	26	1818.3	1072.19	0.17	1075	550	1235
28	4	24	27	4	23	1677.4	1121.30	0.12	1096	560	1291
28	4	24	28	4	25	1744.7	1121.30	0.00	1091	557	1278
28	4	24	29	4	25	1817.3	1121.30	0.14	1086	554	1263
28	5	23	27	5	22	1677.8	1192.36	0.09	1105	563	1308
28	5	23	28	5	24	1746.0	1192.36	0.01	1102	560	1296
28	5	23	29	5	24	1816.9	1192.36	0.10	1095	557	1283
28	6	22	27	6	21	1677.9	1281.06	0.06	1117	565	1328
28	6	22	28	6	23	1746.1	1281.06	0.01	1114	562	1317
28	6	22	29	6	23	1816.7	1281.06	0.06	1108	559	1302
28	7	21	27	7	20	1678.0	1386.24	0.03	1130	568	1347
28	7	21	28	7	22	1746.1	1386.24	0.00	1126	566	1336
28	7	21	29	7	22	1816.7	1386.24	0.04	1121	562	1321
28	8	20	27	8	19	1678.0	1507.59	0.02	1143	571	1367
28	8	20	28	8	21	1746.1	1507.59	0.00	1139	569	1355
28	8	20	29	8	21	1816.7	1507.59	0.02	1134	565	1340
28	9	19	27	9	18	1678.0	1644.90	0.01	1157	574	1386
28	9	19	28	9	20	1746.1	1644.90	0.00	1153	572	1374
28	9	19	29	9	20	1816.7	1644.90	0.01	1148	569	1360
28	10	18	27	10	17	1678.0	1798.01	0.00	1171	578	1406
28	10	18	28	10	19	1746.1	1798.01	0.00	1167	575	1395
28	10	18	29	10	19	1816.7	1798.01	0.00	1162	572	1380
29	1	29	28	1	28	1679.3	1017.74	0.21	1079	560	1270
29	1	29	29	1	28	1802.6	1017.74	0.00	1075	555	1249
29	1	29	30	1	30	1815.2	1017.74	0.24	1074	556	1250
29	2	28	28	2	27	1677.1	1077.33	0.16	1077	556	1253
29	2	28	29	2	27	1781.7	1077.33	0.00	1067	550	1226
29	2	28	30	2	29	1817.3	1077.33	0.18	1068	551	1229
29	3	27	28	3	26	1675.7	1131.72	0.12	1079	554	1253
29	3	27	29	3	26	1758.8	1131.72	0.00	1072	549	1228

29	3	27	30	3	28	1818.8	1131.72	0.14	1069	549	1222
29	4	26	28	4	25	1675.3	1190.67	0.09	1086	554	1265
29	4	26	29	4	25	1747.9	1190.67	0.00	1080	551	1247
29	4	26	30	4	27	1819.3	1190.67	0.10	1076	549	1235
29	5	25	28	5	24	1675.4	1263.01	0.06	1096	557	1283
29	5	25	29	5	24	1746.2	1263.01	0.00	1090	554	1267
29	5	25	30	5	26	1819.3	1263.01	0.07	1086	551	1252
29	6	24	28	6	23	1675.5	1351.70	0.04	1108	559	1302
29	6	24	29	6	23	1746.1	1351.70	0.00	1102	556	1287
29	6	24	30	6	25	1819.2	1351.70	0.05	1098	553	1271
29	7	23	28	7	22	1675.5	1456.84	0.02	1121	562	1321
29	7	23	29	7	22	1746.1	1456.84	0.00	1114	559	1307
29	7	23	30	7	24	1819.1	1456.84	0.03	1110	556	1290
29	8	22	28	8	21	1675.5	1578.17	0.01	1134	565	1340
29	8	22	29	8	21	1746.1	1578.17	0.00	1128	562	1326
29	8	22	30	8	23	1819.1	1578.17	0.01	1124	559	1312
29	9	21	28	9	20	1675.5	1715.49	0.01	1148	569	1360
29	9	21	29	9	20	1746.1	1715.49	0.00	1142	566	1345
29	9	21	30	9	22	1819.1	1715.49	0.01	1136	562	1330
29	10	20	28	10	19	1675.5	1868.61	0.00	1162	572	1380
29	10	20	29	10	19	1746.1	1868.61	0.00	1156	569	1366
29	10	20	30	10	21	1819.2	1868.61	0.00	1150	566	1351
30	0	30	29	0	29	1677.0	1086.69	0.16	1074	556	1250
30	0	30	31	0	31	1817.4	1086.69	0.18	1064	550	1226
30	1	29	29	1	28	1674.4	1145.95	0.12	1065	549	1221
30	1	29	30	1	30	1686.9	1145.95	0.00	1065	550	1223
30	1	29	31	1	30	1820.0	1145.95	0.13	1056	544	1190
30	2	28	29	2	27	1671.8	1187.20	0.10	1056	544	1195
30	2	28	30	2	29	1707.5	1187.20	0.00	1057	545	1197
30	2	28	31	2	29	1822.7	1187.20	0.11	1046	538	1165
30	3	27	29	3	26	1671.3	1219.17	0.08	1063	544	1202
30	3	27	30	3	28	1731.4	1219.17	0.00	1060	543	1195
30	3	27	31	3	28	1823.4	1219.17	0.09	1052	538	1170
30	4	26	29	4	25	1672.4	1266.22	0.07	1076	548	1230
30	4	26	30	4	27	1743.8	1266.22	0.00	1070	546	1216
30	4	26	31	4	27	1822.4	1266.22	0.07	1065	542	1198
30	5	25	29	5	24	1672.9	1336.36	0.05	1086	551	1252
30	5	25	30	5	26	1745.9	1336.36	0.00	1081	548	1235
30	5	25	31	5	26	1821.8	1336.36	0.05	1075	545	1223
30	6	24	29	6	23	1673.0	1424.80	0.03	1098	553	1271
30	6	24	30	6	25	1746.1	1424.80	0.00	1095	550	1254
30	6	24	31	6	25	1821.7	1424.80	0.03	1090	547	1242
30	7	23	29	7	22	1673.1	1529.89	0.02	1110	556	1290
30	7	23	30	7	24	1746.1	1529.89	0.00	1106	553	1273
30	7	23	31	7	24	1821.6	1529.89	0.02	1100	550	1260
30	8	22	29	8	21	1673.1	1651.21	0.01	1124	559	1312
30	8	22	30	8	23	1746.1	1651.21	0.00	1118	556	1294
30	8	22	31	8	23	1821.6	1651.21	0.01	1113	553	1280
30	9	21	29	9	20	1673.1	1788.53	0.00	1136	562	1330
30	9	21	30	9	22	1746.1	1788.53	0.00	1131	559	1312
30	9	21	31	9	22	1821.6	1788.53	0.01	1126	556	1300
30	10	20	29	10	19	1673.0	1941.69	0.00	1150	566	1351
30	10	20	30	10	21	1746.1	1941.69	0.00	1144	563	1334
30	10	20	31	10	21	1821.6	1941.69	0.00	1140	560	1321

VII. APPENDIX C

LISTING OF LINEWIDTHS FOR TYPE B BAND

The format of this listing is the same as that used for the tabulation in the Appendix B. The line position and the relative line intensity values refer to the ν_4 fundamental band of H_2CO . All other spectral parameters listed can be applied to any type B vibrational-rotational band of formaldehyde.

Listing of Linewidth Parameters for Type B Band of H₂CO

Lower State			Upper State			Approximate Line Position in the ν_4 Band (cm ⁻¹)	Rotational Energy of the Lower State (cm ⁻¹)	Relative Line Intensity (ν_4 Band) at 300°K	γ° (in 10 ⁻⁴ cm ⁻¹ atm ⁻¹) of H ₂ CO Lines Broadened by			
J	K _a	K _c	J	K _a	K _c				H ₂ CO	N ₂	O ₂	Air
									300°K	300°K		200°K
0	0	0	1	1	1	2853.8	0.0	1.00	8059	1451	652	1807
1	1	0	1	0	1	2835.0	10.70	1.42	7428	1469	656	1832
1	1	0	2	2	1	2872.6	10.70	1.44	7987	1462	656	1808
2	0	2	1	1	1	2846.5	7.29	0.50	7024	1485	662	1839
2	0	2	2	1	1	2851.7	7.29	2.40	6318	1501	669	1853
2	0	2	3	1	3	2858.2	7.29	1.95	6117	1504	673	1839
2	1	2	1	0	1	2830.4	15.24	1.39	6905	1487	661	1846
2	1	2	2	2	1	2868.0	15.24	0.78	7474	1478	661	1823
2	1	2	3	0	3	2842.6	15.24	0.97	6309	1501	673	1828
2	1	2	3	2	1	2875.3	15.24	1.52	6984	1488	668	1820
2	2	0	1	1	1	2813.7	40.04	1.21	8018	1460	656	1806
2	2	0	2	1	1	2818.9	40.04	0.70	7462	1478	663	1821
2	2	0	3	3	1	2891.4	40.04	2.09	8387	1455	657	1782
3	1	2	2	2	1	2860.0	23.25	0.16	7401	1478	669	1795
3	1	2	3	0	3	2834.6	23.25	3.04	5985	1501	680	1799
3	1	2	3	2	1	2867.3	23.25	1.38	6779	1488	675	1791
3	1	2	4	2	3	2877.0	23.25	1.70	6677	1479	679	1755
3	2	2	2	1	1	2811.6	47.33	1.31	6951	1489	669	1818
3	2	2	3	1	3	2818.2	47.33	1.14	6738	1491	674	1804
3	2	2	3	3	1	2884.1	47.33	0.72	7969	1466	664	1780
3	2	2	4	1	3	2829.2	47.33	0.31	6971	1470	677	1742
3	2	2	4	3	1	2893.9	47.33	2.11	7642	1467	670	1761
3	3	0	2	2	1	2795.0	88.24	1.61	8387	1455	657	1782
3	3	0	3	2	1	2802.3	88.24	0.57	7971	1466	664	1780
3	3	0	4	4	1	2910.2	88.24	2.34	8744	1443	657	1757
4	0	4	3	1	3	2841.3	24.26	1.43	6179	1486	681	1763
4	0	4	4	1	3	2852.3	24.26	3.84	6232	1464	684	1701
4	0	4	5	1	5	2862.4	24.26	2.77	6383	1443	684	1669
4	1	4	3	0	3	2826.1	31.68	2.17	6022	1488	682	1770

4	1	4	4	2	3	2868.6	31.68	1.73	6680	1466	681	1726
4	1	4	5	0	5	2847.9	31.68	1.90	6504	1441	682	1668
4	1	4	5	2	3	2880.8	31.68	1.66	6858	1439	681	1679
4	2	2	3	1	3	2808.4	57.08	1.33	6665	1481	678	1768
4	2	2	3	3	1	2874.4	57.08	0.10	7999	1456	668	1744
4	2	2	4	1	3	2819.4	57.08	1.65	6777	1460	681	1706
4	2	2	4	3	1	2884.1	57.08	1.23	7569	1457	674	1725
4	2	2	5	3	3	2896.3	57.08	2.14	7552	1437	675	1685
4	3	2	3	2	1	2792.6	97.96	1.60	7643	1467	670	1761
4	3	2	4	2	3	2802.3	97.96	0.99	7565	1458	673	1725
4	3	2	4	4	1	2900.4	97.96	0.58	8501	1445	663	1739
4	3	2	5	2	3	2814.5	97.96	0.19	7775	1430	674	1678
4	3	2	5	4	1	2912.6	97.96	2.29	8334	1435	667	1709
4	4	0	3	3	1	2776.3	155.16	1.62	8744	1443	657	1757
4	4	0	4	3	1	2786.0	155.16	0.42	8501	1445	663	1739
4	4	0	5	5	1	2928.8	155.16	2.20	9020	1429	655	1738
5	1	4	4	2	3	2854.5	45.82	0.52	7106	1431	678	1658
5	1	4	5	0	5	2833.8	45.82	4.10	6764	1405	680	1598
5	1	4	5	2	3	2866.7	45.82	2.32	7144	1403	678	1609
5	1	4	6	2	5	2891.2	45.82	1.93	7380	1372	674	1564
5	2	4	4	1	3	2807.3	69.18	1.50	6913	1433	681	1659
5	2	4	5	1	5	2817.5	69.18	1.77	7006	1411	680	1629
5	2	4	5	3	3	2884.2	69.18	1.63	7656	1410	676	1639
5	2	4	6	1	5	2834.9	69.18	0.65	7522	1372	673	1566
5	2	4	6	3	3	2898.8	69.18	2.15	7807	1382	673	1596
5	3	2	4	2	3	2790.2	110.11	1.60	7549	1437	675	1686
5	3	2	4	4	1	2888.3	110.11	0.06	8587	1425	665	1699
5	3	2	5	2	3	2802.4	110.11	1.30	7663	1410	676	1639
5	3	2	5	4	1	2900.4	110.11	1.01	8324	1414	669	1670
5	3	2	6	4	3	2915.0	110.11	2.25	8361	1395	668	1630
5	4	2	4	3	1	2773.9	167.31	1.57	8334	1435	667	1709
5	4	2	5	3	3	2786.0	167.31	0.73	8324	1414	669	1670
5	4	2	5	5	1	2916.7	167.31	0.43	8929	1421	660	1710
5	4	2	6	3	3	2800.6	167.31	0.11	8521	1389	666	1627
5	4	2	6	5	1	2931.3	167.31	2.11	8886	1405	662	1675
5	5	0	4	4	1	2757.6	240.76	1.37	9020	1429	655	1738
5	5	0	5	4	1	2769.8	240.76	0.28	8929	1421	660	1710
5	5	0	6	6	1	2947.4	240.76	1.80	9226	1417	652	1729
6	0	6	5	1	5	2835.8	50.86	2.22	7040	1378	677	1572
6	0	6	6	1	5	2853.2	50.86	4.61	7371	1335	670	1509
6	0	6	7	1	7	2866.3	50.86	3.39	7539	1317	667	1487
6	1	6	5	0	5	2822.1	57.49	2.76	6946	1382	679	1570
6	1	6	6	2	5	2869.5	57.49	2.27	7490	1351	672	1536
6	1	6	7	0	7	2853.5	57.49	2.68	7608	1314	666	1490
6	1	6	7	2	5	2886.8	57.49	1.63	7839	1316	666	1496
6	2	4	5	1	5	2802.7	83.91	1.34	7313	1380	676	1582
6	2	4	5	3	3	2869.4	83.91	0.34	7958	1382	671	1592
6	2	4	6	1	5	2820.2	83.91	2.38	7651	1338	669	1519
6	2	4	6	3	3	2884.0	83.91	1.94	7995	1354	669	1549
6	2	4	7	3	5	2901.0	83.91	2.14	8203	1323	663	1511
6	3	4	5	2	3	2787.8	124.69	1.59	7811	1382	673	1596
6	3	4	6	2	5	2802.3	124.69	1.54	7978	1354	669	1551
6	3	4	6	4	3	2900.4	124.69	1.32	8462	1366	666	1587
6	3	4	7	2	5	2819.6	124.69	0.39	8304	1318	662	1509

6	3	4	7	4	3	2917.4	124.69	2.19	8599	1338	662	1553
6	4	2	5	3	3	2771.5	181.89	1.51	8361	1395	668	1630
6	4	2	5	5	1	2902.1	181.89	0.04	9058	1397	659	1671
6	4	2	6	3	3	2786.0	181.89	0.97	8462	1366	666	1587
6	4	2	6	5	1	2916.7	181.89	0.74	8920	1382	661	1635
6	4	2	7	5	3	2933.7	181.89	2.02	8993	1357	659	1599
6	5	2	5	4	1	2755.2	255.33	1.30	8886	1405	662	1675
6	5	2	6	4	3	2769.8	255.33	0.49	8920	1382	661	1635
6	5	2	6	6	1	2932.9	255.33	0.28	9255	1401	655	1694
6	5	2	7	4	3	2786.8	255.33	0.06	9102	1353	657	1601
6	5	2	7	6	1	2949.9	255.33	1.69	9304	1381	655	1657
6	6	0	5	5	1	2739.0	344.96	1.01	9226	1417	652	1729
6	6	0	6	5	1	2753.6	344.96	0.17	9255	1401	655	1694
6	6	0	7	7	1	2965.9	344.96	1.30	9377	1409	650	1726
7	1	6	6	2	5	2848.6	78.39	0.82	8015	1305	662	1482
7	1	6	7	0	7	2832.6	78.39	4.46	7916	1267	656	1430
7	1	6	7	2	5	2865.9	78.39	3.02	8140	1269	655	1436
7	1	6	8	2	7	2885.0	78.39	2.03	8342	1245	648	1415
7	2	6	6	1	5	2803.4	100.73	1.60	7896	1305	663	1481
7	2	6	7	1	7	2816.4	100.73	2.08	7983	1288	660	1462
7	2	6	7	3	5	2884.2	100.73	2.15	8356	1290	657	1476
7	2	6	8	1	7	2840.9	100.73	0.92	8452	1246	648	1420
7	2	6	8	3	5	2903.7	100.73	2.08	8572	1263	650	1449
7	3	4	6	2	5	2785.3	141.72	1.55	8193	1323	663	1513
7	3	4	6	4	3	2883.4	141.72	0.22	8699	1335	660	1554
7	3	4	7	2	5	2802.6	141.72	1.73	8378	1287	657	1469
7	3	4	7	4	3	2900.4	141.72	1.55	8722	1307	656	1511
7	3	4	8	4	5	2919.9	141.72	2.11	8883	1280	650	1481
7	4	4	6	3	3	2769.0	198.89	1.46	8599	1338	662	1553
7	4	4	7	3	5	2786.1	198.89	1.13	8721	1307	656	1511
7	4	4	7	5	3	2916.7	198.89	0.97	9076	1329	655	1562
7	4	4	8	3	5	2805.5	198.89	0.24	8949	1280	649	1484
7	4	4	8	5	3	2936.1	198.89	1.92	9193	1304	650	1529
7	5	2	6	4	3	2752.8	272.33	1.23	8993	1357	659	1599
7	5	2	6	6	1	2915.9	272.33	0.02	9414	1377	653	1658
7	5	2	7	4	3	2769.8	272.33	0.64	9076	1329	655	1562
7	5	2	7	6	1	2932.9	272.33	0.49	9368	1356	653	1621
7	5	2	8	6	3	2952.3	272.33	1.59	9455	1332	650	1588
7	6	2	6	5	1	2736.6	361.95	0.94	9304	1381	655	1657
7	6	2	7	5	3	2753.6	361.95	0.30	9368	1356	653	1621
7	6	2	7	7	1	2948.9	361.95	0.17	9500	1389	651	1689
7	6	2	8	5	3	2773.1	361.95	0.03	9524	1331	649	1591
7	6	2	8	7	1	2968.4	361.95	1.20	9605	1365	649	1652
7	7	0	6	6	1	2720.5	467.66	0.66	9377	1409	650	1726
7	7	0	7	6	1	2737.5	467.66	0.10	9500	1389	651	1689
7	7	0	8	8	1	2984.3	467.66	0.84	9480	1404	648	1726
8	0	8	7	1	7	2830.2	86.97	2.79	8112	1254	654	1422
8	0	8	8	1	7	2854.7	86.97	4.67	8335	1209	642	1375
8	0	8	9	1	9	2870.0	86.97	3.76	8426	1197	638	1366
8	1	8	7	0	7	2818.3	92.65	3.15	8049	1253	652	1418
8	1	8	8	2	7	2870.7	92.65	2.47	8394	1227	645	1400
8	1	8	9	0	9	2859.1	92.65	3.24	8489	1196	640	1368
8	1	8	9	2	7	2893.3	92.65	1.42	8704	1196	638	1376
8	2	6	7	1	7	2796.5	120.62	1.19	8327	1255	652	1430

8	2	6	7	3	5	2864.3	120.62	0.53	8664	1257	649	1443
8	2	6	8	1	7	2821.0	120.62	2.90	8527	1208	640	1382
8	2	6	8	3	5	2883.8	120.62	2.30	8713	1228	642	1413
8	2	6	9	3	7	2905.7	120.62	2.01	8877	1203	635	1388
8	3	6	7	2	5	2783.1	161.16	1.50	8584	1260	650	1442
8	3	6	8	2	7	2802.2	161.16	1.83	8685	1232	642	1416
8	3	6	8	4	5	2900.4	161.16	1.70	8976	1252	643	1453
8	3	6	9	2	7	2824.8	161.16	0.53	8947	1201	636	1393
8	3	6	9	4	5	2922.3	161.16	2.01	9121	1226	637	1426
8	4	4	7	3	5	2766.6	218.33	1.38	8883	1280	650	1481
8	4	4	7	5	3	2897.2	218.33	0.13	9262	1303	649	1532
8	4	4	8	3	5	2786.1	218.33	1.24	8976	1252	643	1453
8	4	4	8	5	3	2916.7	218.33	1.12	9267	1277	644	1499
8	4	4	9	5	5	2938.5	218.33	1.81	9382	1252	639	1473
8	5	4	7	4	3	2750.4	291.76	1.15	9193	1304	650	1529
8	5	4	8	4	5	2769.8	291.76	0.75	9266	1277	644	1499
8	5	4	8	6	3	2932.8	291.76	0.64	9518	1306	646	1555
8	5	4	9	4	5	2791.7	291.76	0.14	9427	1252	637	1476
8	5	4	9	6	3	2954.7	291.76	1.49	9612	1283	641	1526
8	6	2	7	5	3	2734.2	381.37	0.67	9455	1332	650	1588
8	6	2	7	7	1	2929.5	381.37	0.01	9669	1364	648	1656
8	6	2	8	5	3	2753.6	381.37	0.39	9518	1306	646	1555
8	6	2	8	7	1	2948.9	381.37	0.30	9683	1341	646	1620
8	6	2	9	7	3	2970.8	381.37	1.11	9776	1317	643	1588
8	7	2	7	6	1	2718.1	487.07	0.61	9605	1365	649	1652
8	7	2	8	6	3	2737.5	487.07	0.17	9683	1341	646	1620
8	7	2	8	8	1	2964.9	487.07	0.10	9666	1381	647	1690
8	7	2	9	6	3	2759.4	487.07	0.02	9815	1318	642	1592
8	7	2	9	8	1	2986.7	487.07	0.77	9810	1357	644	1655
8	8	0	7	7	1	2702.1	608.75	0.38	9480	1404	648	1726
8	8	0	8	7	1	2721.6	608.75	0.05	9666	1381	647	1690
8	8	0	9	9	1	3002.6	608.75	0.48	9542	1402	646	1727
9	1	8	8	2	7	2842.5	120.93	1.02	8764	1189	634	1368
9	1	8	9	0	9	2830.9	120.93	4.19	8593	1157	629	1334
9	1	8	9	2	7	2865.0	120.93	3.45	8761	1158	626	1339
9	1	8	10	2	9	2888.5	120.93	2.01	8816	1146	620	1324
9	2	8	8	1	7	2799.7	141.95	1.61	8663	1187	633	1363
9	2	8	9	1	9	2815.0	141.95	2.11	8675	1176	630	1354
9	2	8	9	3	7	2884.3	141.95	2.36	8904	1183	628	1369
9	2	8	10	1	9	2847.2	141.95	1.10	8926	1147	619	1327
9	2	8	10	3	7	2908.7	141.95	1.89	9031	1162	622	1351
9	3	6	8	2	7	2780.3	183.07	1.42	8865	1207	636	1391
9	3	6	8	4	5	2878.5	183.07	0.35	9165	1226	636	1428
9	3	6	9	2	7	2802.9	183.07	1.90	8933	1176	628	1367
9	3	6	9	4	5	2900.4	183.07	1.79	9154	1201	629	1401
9	3	6	10	4	7	2924.7	183.07	1.89	9256	1181	623	1384
9	4	6	8	3	5	2764.2	240.21	1.30	9120	1226	637	1426
9	4	6	9	3	7	2786.1	240.21	1.31	9154	1201	629	1401
9	4	6	9	5	5	2916.7	240.21	1.22	9410	1226	632	1445
9	4	6	10	3	7	2810.5	240.21	0.33	9287	1181	623	1388
9	4	6	10	5	5	2940.9	240.21	1.69	9497	1204	626	1425
9	5	4	8	4	5	2748.0	313.62	1.07	9381	1252	639	1473
9	5	4	8	6	3	2911.0	313.62	0.08	9657	1293	640	1530
9	5	4	9	4	5	2769.8	313.62	0.81	9410	1226	632	1445

9	5	4	9	6	3	2932.8	313.62	0.74	9640	1257	635	1500
9	5	4	10	6	5	2957.1	313.62	1.37	9712	1234	630	1476
9	6	4	8	5	3	2731.8	403.22	0.80	9612	1283	641	1526
9	6	4	9	5	5	2753.6	403.22	0.45	9640	1257	635	1500
9	6	4	9	7	3	2948.9	403.22	0.38	9816	1294	638	1558
9	6	4	10	5	5	2777.9	403.22	0.07	9743	1235	629	1480
9	6	4	10	7	3	2973.2	403.22	1.02	9885	1270	633	1534
9	7	2	8	6	3	2715.7	508.91	0.55	9776	1317	643	1588
9	7	2	8	8	1	2943.1	508.91	0.01	9838	1357	643	1660
9	7	2	9	6	3	2737.6	508.91	0.21	9816	1294	638	1558
9	7	2	9	8	1	2964.9	508.91	0.16	9893	1333	641	1625
9	7	2	10	8	3	2989.2	508.91	0.70	9979	1311	637	1595
9	8	2	8	7	1	2699.7	630.58	0.35	9810	1357	644	1655
9	8	2	9	7	3	2721.6	630.58	0.08	9893	1333	641	1625
9	8	2	9	9	1	2980.8	630.58	0.05	9772	1378	644	1693
9	8	2	10	7	3	2745.8	630.58	0.01	9997	1313	636	1601
9	8	2	10	9	1	3005.0	630.58	0.44	9934	1354	641	1660
9	9	0	8	8	1	2683.9	768.11	0.20	9542	1402	646	1727
9	9	0	9	8	1	2705.7	768.11	0.02	9772	1378	644	1693
9	9	0	10	10	1	3020.7	768.11	0.25	9569	1402	645	1730
10	0	10	9	1	9	2824.5	132.48	3.08	8716	1151	624	1330
10	0	10	10	1	9	2856.7	132.48	4.17	8692	1115	613	1301
10	0	10	11	1	11	2873.6	132.48	3.86	8718	1111	611	1298
10	1	10	9	0	9	2814.7	137.13	3.29	8648	1148	626	1326
10	1	10	10	2	9	2872.3	137.13	2.39	8800	1134	617	1317
10	1	10	11	0	11	2864.8	137.13	3.52	8791	1115	611	1301
10	1	10	11	2	9	2900.5	137.13	1.10	8991	1116	610	1311
10	2	8	9	1	9	2789.7	167.31	0.94	8928	1153	623	1337
10	2	8	9	3	7	2859.0	167.31	0.63	9095	1160	621	1350
10	2	8	10	1	9	2821.8	167.31	3.16	8828	1119	612	1308
10	2	8	10	3	7	2883.4	167.31	2.39	9007	1137	614	1332
10	2	8	11	3	9	2910.1	167.31	1.78	9039	1121	609	1323
10	3	8	9	2	7	2778.6	207.38	1.34	9036	1156	622	1349
10	3	8	10	2	9	2802.0	207.38	1.88	8981	1140	615	1334
10	3	8	10	4	7	2900.4	207.38	1.82	9220	1157	616	1366
10	3	8	11	2	9	2830.3	207.38	0.59	9096	1121	608	1328
10	3	8	11	4	7	2927.1	207.38	1.76	9262	1141	612	1355
10	4	6	9	3	7	2761.8	264.52	1.21	9257	1181	623	1384
10	4	6	9	5	5	2892.3	264.52	0.22	9527	1205	626	1428
10	4	6	10	3	7	2786.1	264.52	1.33	9219	1157	616	1366
10	4	6	10	5	5	2916.6	264.52	1.27	9464	1183	620	1408
10	4	6	11	5	7	2943.4	264.52	1.56	9497	1166	615	1394
10	5	6	9	4	5	2745.5	337.91	0.99	9496	1204	626	1425
10	5	6	10	4	7	2769.8	337.91	0.84	9465	1183	620	1408
10	5	6	10	6	5	2932.8	337.91	0.79	9688	1212	624	1455
10	5	6	11	4	7	2796.6	337.91	0.19	9520	1167	615	1398
10	5	6	11	6	5	2959.5	337.91	1.26	9718	1196	619	1441
10	6	4	9	5	5	2729.4	427.50	0.73	9712	1234	630	1476
10	6	4	9	7	3	2924.6	427.50	0.04	9910	1271	633	1539
10	6	4	10	5	5	2753.7	427.50	0.48	9688	1212	624	1455
10	6	4	10	7	3	2948.9	427.50	0.44	9873	1247	628	1511
10	6	4	11	7	5	2975.6	427.50	0.93	9903	1229	623	1493
10	7	4	9	6	3	2713.3	533.17	0.50	9885	1270	633	1534
10	7	4	10	6	5	2737.6	533.17	0.25	9873	1247	628	1511

10	7	4	10	8	3	2964.9	533.17	0.21	9996	1288	633	1570
10	7	4	11	6	5	2764.3	533.17	0.03	9919	1231	623	1497
10	7	4	11	8	3	2991.6	533.17	0.63	10037	1267	628	1550
10	8	2	9	7	3	2697.3	654.83	0.31	9979	1311	637	1595
10	8	2	9	9	1	2956.5	654.83	0.00	9934	1356	640	1667
10	8	2	10	7	3	2721.6	654.83	0.11	9996	1288	633	1570
10	8	2	10	9	1	2980.8	654.83	0.08	10012	1333	637	1634
10	8	2	11	9	3	3007.4	654.83	0.39	10085	1311	633	1608
10	9	2	9	8	1	2681.5	792.35	0.18	9934	1354	641	1660
10	9	2	10	8	3	2705.7	792.35	0.04	10012	1333	637	1634
10	9	2	10	10	1	2996.5	792.35	0.02	9824	1378	642	1698
10	9	2	11	8	3	2732.4	792.35	0.00	10085	1313	632	1614
10	9	2	11	10	1	3023.1	792.35	0.23	9990	1356	638	1670
10	10	0	9	9	1	2665.8	945.60	0.10	9569	1402	645	1730
10	10	0	10	9	1	2690.0	945.60	0.01	9824	1378	642	1698
10	10	0	11	11	1	3038.7	945.60	0.12	9573	1403	644	1733
11	1	10	10	2	9	2836.1	173.37	1.11	8923	1110	607	1307
11	1	10	11	0	11	2828.6	173.37	3.50	8636	1090	601	1285
11	1	10	11	2	9	2864.3	173.37	3.56	8730	1091	600	1294
11	1	10	12	2	11	2891.7	173.37	1.88	8651	1083	596	1294
11	2	10	10	1	9	2796.3	192.82	1.52	8811	1107	607	1300
11	2	10	11	1	11	2813.3	192.82	1.92	8776	1101	604	1297
11	2	10	11	3	9	2884.6	192.82	2.31	8913	1108	604	1315
11	2	10	12	1	11	2853.7	192.82	1.18	8775	1088	597	1301
11	2	10	12	3	9	2913.9	192.82	1.61	8914	1101	599	1314
11	3	8	10	2	9	2775.2	234.21	1.21	9042	1124	610	1324
11	3	8	10	4	7	2873.5	234.21	0.42	9284	1141	611	1357
11	3	8	11	2	9	2803.4	234.21	1.89	8924	1105	603	1314
11	3	8	11	4	7	2900.3	234.21	1.79	9143	1125	606	1345
11	3	8	12	4	9	2929.5	234.21	1.61	9124	1115	601	1342
11	4	8	10	3	7	2759.4	291.26	1.11	9259	1140	612	1356
11	4	8	11	3	9	2786.1	291.26	1.31	9148	1125	606	1346
11	4	8	11	5	7	2916.6	291.26	1.27	9391	1149	609	1385
11	4	8	12	3	9	2815.4	291.26	0.36	9148	1118	601	1346
11	4	8	12	5	7	2945.8	291.26	1.42	9371	1138	605	1379
11	5	6	10	4	7	2743.1	364.64	0.90	9490	1100	615	1394
11	5	6	10	6	5	2906.1	364.64	0.12	9734	1198	619	1446
11	5	6	11	4	7	2769.9	364.64	0.85	9392	1149	609	1385
11	5	6	11	6	5	2932.8	364.64	0.81	9624	1178	613	1429
11	5	6	12	6	7	2961.9	364.64	1.14	9603	1166	609	1420
11	6	6	10	5	5	2726.9	454.21	0.66	9718	1196	619	1441
11	6	6	11	5	7	2753.7	454.21	0.50	9624	1178	613	1429
11	6	6	11	7	5	2948.9	454.21	0.47	9828	1213	618	1478
11	6	6	12	5	7	2782.8	454.21	0.10	9616	1168	609	1425
11	6	6	12	7	5	2978.0	454.21	0.84	9809	1198	613	1468
11	7	4	10	6	5	2710.9	559.87	0.45	9903	1229	623	1493
11	7	4	10	8	3	2938.2	559.87	0.02	10045	1269	628	1555
11	7	4	11	6	5	2737.6	559.87	0.26	9828	1213	618	1478
11	7	4	11	8	3	2964.9	559.87	0.24	9987	1249	623	1532
11	7	4	12	8	5	2994.0	559.87	0.57	9977	1235	618	1518
11	8	4	10	7	3	2694.9	681.51	0.28	10037	1267	628	1550
11	8	4	11	7	5	2721.6	681.51	0.12	9987	1249	623	1532
11	8	4	11	9	3	2980.7	681.51	0.11	10076	1290	628	1587
11	8	4	12	7	5	2750.7	681.51	0.02	9981	1238	618	1523

11	8	4	12	9	3	3009.8	681.51	0.35	10088	1273	624	1571
11	9	2	10	8	3	2679.1	819.02	0.16	10085	1311	633	1608
11	9	2	10	10	1	2969.8	819.02	0.00	9970	1359	638	1676
11	9	2	11	8	3	2705.7	819.02	0.05	10076	1290	628	1587
11	9	2	11	10	1	2996.5	819.02	0.04	10057	1336	634	1647
11	9	2	12	10	3	3025.6	819.02	0.20	10112	1316	630	1625
11	10	2	10	9	1	2663.3	972.25	0.08	9990	1356	638	1670
11	10	2	11	9	3	2690.0	972.25	0.02	10057	1336	634	1647
11	10	2	11	11	1	3012.0	972.25	0.01	9833	1381	640	1705
11	10	2	12	9	3	2719.1	972.25	0.00	10098	1319	630	1631
11	10	2	12	11	1	3041.1	972.25	0.11	9994	1360	637	1681
12	0	12	11	1	11	2818.8	187.25	3.10	8716	1089	600	1288
12	0	12	12	1	11	2859.3	187.25	3.36	8443	1071	593	1288
12	0	12	13	1	13	2877.2	187.25	3.69	8429	1069	591	1287
12	1	12	11	0	11	2811.1	190.89	3.19	8640	1088	599	1285
12	1	12	12	2	11	2874.2	190.89	2.10	8609	1081	595	1294
12	1	12	13	0	13	2870.4	190.89	3.49	8509	1073	591	1291
12	1	12	13	2	11	2908.6	190.89	0.77	8663	1077	591	1304
12	2	10	11	1	11	2782.0	224.06	0.66	8896	1092	599	1300
12	2	10	11	3	9	2853.3	224.06	0.63	8945	1100	599	1318
12	2	10	12	1	11	2822.5	224.06	3.11	8487	1074	592	1301
12	2	10	12	3	9	2882.6	224.06	2.26	8702	1088	594	1316
12	2	10	13	3	11	2914.2	224.06	1.49	8603	1082	591	1320
12	3	10	11	2	9	2774.3	263.36	1.12	8886	1097	598	1314
12	3	10	12	2	11	2801.7	263.36	1.76	8707	1086	594	1314
12	3	10	12	4	9	2900.3	263.36	1.73	8945	1105	596	1340
12	3	10	13	2	11	2836.1	263.36	0.59	8661	1083	591	1323
12	3	10	13	4	9	2931.9	263.36	1.45	8875	1100	593	1343
12	4	8	11	3	9	2756.9	320.44	1.00	9132	1115	601	1342
12	4	8	11	5	7	2837.4	320.44	0.25	9389	1140	605	1382
12	4	8	12	3	9	2786.3	320.44	1.26	8944	1106	596	1341
12	4	8	12	5	7	2916.6	320.44	1.23	9199	1129	600	1374
12	4	8	13	5	9	2948.2	320.44	1.28	9126	1122	597	1375
12	5	8	11	4	7	2740.7	393.80	0.81	9372	1138	605	1379
12	5	8	12	4	9	2769.9	393.80	0.82	9199	1129	600	1374
12	5	8	12	6	7	2932.8	393.80	0.80	9443	1155	604	1415
12	5	8	13	4	9	2801.5	393.80	0.21	9141	1124	597	1378
12	5	8	13	6	7	2964.4	393.80	1.02	9371	1147	601	1414
12	6	6	11	5	7	2724.5	483.35	0.59	9603	1166	609	1420
12	6	6	11	7	5	2919.8	483.35	0.06	9819	1201	613	1473
12	6	6	12	5	7	2753.7	483.35	0.49	9443	1155	604	1415
12	6	6	12	7	5	2948.9	483.35	0.47	9667	1186	608	1460
12	6	6	13	7	7	2980.4	483.35	0.75	9599	1176	605	1455
12	7	6	11	6	5	2708.5	588.99	0.40	9809	1198	613	1468
12	7	6	12	6	7	2737.6	588.99	0.27	9667	1186	608	1460
12	7	6	12	8	5	2964.9	588.99	0.25	9857	1221	614	1508
12	7	6	13	6	7	2769.2	588.99	0.05	9605	1178	605	1459
12	7	6	13	8	5	2996.4	588.99	0.50	9797	1209	610	1501
12	8	4	11	7	5	2692.5	710.62	0.25	9977	1235	618	1518
12	8	4	11	9	3	2951.6	710.62	0.01	10084	1276	624	1577
12	8	4	12	7	5	2721.6	710.62	0.13	9857	1221	614	1508
12	8	4	12	9	3	2980.7	710.62	0.12	10003	1259	619	1559
12	8	4	13	9	5	3012.3	710.62	0.31	9956	1246	616	1547
12	9	4	11	8	3	2676.6	848.11	0.14	10088	1273	624	1571

12	9	4	12	8	5	2705.7	848.11	0.06	10003	1259	619	1559
12	9	4	12	10	3	2996.5	848.11	0.05	10077	1299	626	1609
12	9	4	13	8	5	2737.3	848.11	0.01	9953	1249	616	1553
12	9	4	13	10	3	3028.0	848.11	0.18	10058	1284	622	1596
12	10	2	11	9	3	2660.9	1001.33	0.07	10112	1316	630	1625
12	10	2	11	11	1	2983.0	1001.33	0.00	9958	1363	636	1686
12	10	2	12	9	3	2690.0	1001.33	0.02	10077	1299	626	1609
12	10	2	12	11	1	3012.0	1001.33	0.02	10045	1342	632	1662
12	10	2	13	11	3	3043.5	1001.33	0.09	10076	1324	629	1643
13	1	12	12	2	11	2829.4	235.66	1.09	8496	1071	590	1305
13	1	12	13	0	13	2825.7	235.66	2.65	8128	1063	586	1298
13	1	12	13	2	11	2863.8	235.66	3.33	8118	1067	584	1311
13	1	12	14	2	13	2894.7	235.66	1.67	7971	1065	582	1313
13	2	12	12	1	11	2793.2	253.29	1.36	8364	1069	590	1304
13	2	12	13	1	13	2811.2	253.29	1.60	8319	1067	588	1301
13	2	12	13	3	11	2885.0	253.29	2.07	8392	1077	588	1323
13	2	12	14	1	13	2860.4	253.29	1.16	8108	1065	583	1315
13	2	12	14	3	11	2919.3	253.29	1.28	8297	1074	584	1327
13	3	10	12	2	11	2769.9	295.17	0.97	8658	1081	591	1320
13	3	10	12	4	9	2868.5	295.17	0.42	8890	1099	593	1346
13	3	10	13	2	11	2804.3	295.17	1.72	8359	1077	586	1326
13	3	10	13	4	9	2900.1	295.17	1.63	8632	1093	590	1348
13	3	10	14	4	11	2934.2	295.17	1.30	8506	1090	587	1350
13	4	10	12	3	9	2754.6	352.06	0.89	8868	1100	593	1344
13	4	10	13	3	11	2786.2	352.06	1.19	8634	1094	590	1348
13	4	10	13	5	9	2916.6	352.06	1.17	8897	1116	593	1377
13	4	10	14	3	11	2820.5	352.06	0.35	8532	1091	587	1352
13	4	10	14	5	9	2950.6	352.06	1.13	8776	1110	590	1380
13	5	9	12	4	9	2738.3	425.39	0.72	9126	1122	597	1375
13	5	8	12	6	7	2901.2	425.39	0.14	9381	1150	601	1418
13	5	8	13	4	9	2769.9	425.39	0.78	8898	1115	593	1377
13	5	8	13	6	7	2932.8	425.39	0.77	9155	1141	597	1413
13	5	8	14	6	9	2966.8	425.39	0.90	9038	1134	594	1413
13	6	8	12	5	7	2722.1	514.92	0.52	9371	1147	601	1414
13	6	8	13	5	9	2753.7	514.92	0.47	9155	1141	597	1413
13	6	8	13	7	7	2948.9	514.92	0.46	9399	1168	602	1453
13	6	8	14	5	9	2787.7	514.92	0.11	9045	1136	595	1416
13	6	8	14	7	7	2982.9	514.92	0.66	9285	1161	599	1451
13	7	6	12	6	7	2706.0	620.55	0.35	9599	1176	605	1455
13	7	6	12	8	5	2933.3	620.55	0.03	9800	1211	610	1505
13	7	6	13	6	7	2737.6	620.55	0.26	9399	1168	602	1453
13	7	6	13	8	5	2964.9	620.55	0.25	9618	1199	607	1496
13	7	6	14	8	7	2998.8	620.55	0.44	9511	1191	605	1490
13	8	6	12	7	5	2690.1	742.16	0.22	9797	1209	610	1501
13	8	6	13	7	7	2721.6	742.16	0.13	9618	1199	607	1496
13	8	6	13	9	5	2980.7	742.16	0.12	9805	1234	613	1540
13	8	6	14	7	7	2755.6	742.16	0.02	9514	1193	605	1493
13	8	6	14	9	5	3014.7	742.16	0.27	9711	1223	610	1532
13	9	4	12	9	5	2674.2	879.64	0.12	9956	1246	616	1547
13	9	4	12	10	3	2964.9	879.64	0.00	10047	1287	622	1601
13	9	4	13	8	5	2705.8	879.64	0.06	9805	1234	613	1540
13	9	4	13	10	3	2996.4	879.64	0.05	9943	1272	619	1586
13	9	4	14	10	5	3030.4	879.64	0.15	9867	1260	615	1574
13	10	4	12	9	3	2658.5	1032.84	0.06	10058	1284	622	1596

13	10	4	13	9	5	2690.0	1032.84	0.02	9943	1272	619	1586
13	10	4	13	11	3	3012.0	1032.84	0.02	10016	1310	625	1629
13	10	4	14	9	5	2724.0	1032.84	0.00	9858	1263	616	1578
13	10	4	14	11	3	3045.9	1032.84	0.08	9969	1296	622	1616
14	0	14	13	1	13	2813.3	251.16	2.85	8180	1062	584	1298
14	0	14	14	1	13	2862.5	251.16	2.48	7722	1057	580	1310
14	0	14	15	1	15	2880.9	251.16	3.30	7691	1057	579	1308
14	1	14	13	0	13	2807.4	253.89	2.89	8104	1060	585	1299
14	1	14	14	2	13	2876.5	253.89	1.71	7930	1062	581	1313
14	1	14	15	0	15	2875.9	253.89	3.18	7755	1055	580	1308
14	1	14	15	2	13	2917.6	253.89	0.49	7862	1059	580	1320
14	2	12	13	1	13	2773.5	290.96	0.42	8308	1068	584	1311
14	2	12	13	3	11	2847.3	290.96	0.57	8271	1078	584	1332
14	2	12	14	1	13	2822.7	290.96	2.78	7656	1060	579	1320
14	2	12	14	3	11	2881.6	290.96	1.99	7922	1071	581	1334
14	2	12	15	3	13	2917.9	290.96	1.18	7731	1067	579	1336
14	3	12	13	2	11	2770.4	329.09	0.89	8210	1076	584	1330
14	3	12	14	2	13	2801.3	329.09	1.51	7992	1072	582	1331
14	3	12	14	4	11	2900.3	329.09	1.51	8235	1086	585	1354
14	3	12	15	2	13	2842.4	329.09	0.53	7806	1068	580	1339
14	3	12	15	4	11	2936.8	329.09	1.14	8079	1081	582	1356
14	4	10	13	3	11	2752.1	386.13	0.78	8515	1091	587	1350
14	4	10	13	5	9	2882.5	386.13	0.25	8790	1112	590	1382
14	4	10	14	3	11	2786.5	386.13	1.11	8229	1085	584	1353
14	4	10	14	5	9	2916.5	386.13	1.09	8501	1106	588	1382
14	4	10	15	5	11	2953.0	386.13	0.99	8347	1101	585	1382
14	5	10	13	4	9	2735.9	459.41	0.63	8777	1110	590	1380
14	5	10	14	4	11	2769.9	459.41	0.73	8500	1106	588	1382
14	5	10	14	6	9	2932.7	459.41	0.73	8772	1129	591	1414
14	5	10	15	4	11	2806.5	459.41	0.20	8355	1103	586	1384
14	5	10	15	6	9	2969.2	459.41	0.79	8616	1124	589	1413
14	6	8	13	5	9	2719.7	548.92	0.46	9038	1134	594	1413
14	6	8	13	7	7	2914.9	548.92	0.07	9290	1164	599	1454
14	6	8	14	5	9	2753.7	548.92	0.44	8772	1129	591	1414
14	6	8	14	7	7	2948.9	548.92	0.44	9036	1155	596	1449
14	6	8	15	7	9	2985.3	548.92	0.57	8883	1149	593	1445
14	7	8	13	6	7	2703.6	654.53	0.30	9285	1161	599	1451
14	7	8	14	6	9	2737.6	654.53	0.25	9036	1155	596	1449
14	7	8	14	8	7	2964.8	654.53	0.24	9281	1185	602	1487
14	7	8	15	6	9	2774.1	654.53	0.05	8890	1150	594	1448
14	7	8	15	8	7	3001.2	654.53	0.38	9134	1176	598	1480
14	8	6	13	7	7	2687.7	776.13	0.19	9511	1191	605	1490
14	8	6	13	9	5	2946.7	776.13	0.01	9705	1226	610	1535
14	8	6	14	7	7	2721.6	776.13	0.13	9281	1185	602	1487
14	8	6	14	9	5	2980.7	776.13	0.12	9502	1215	608	1526
14	8	6	15	9	7	3017.1	776.13	0.23	9364	1207	605	1518
14	9	6	13	8	5	2671.8	913.59	0.11	9711	1223	610	1532
14	9	6	14	8	7	2705.8	913.59	0.06	9502	1215	608	1526
14	9	6	14	10	5	2996.4	913.59	0.06	9690	1249	613	1566
14	9	6	15	8	7	2742.2	913.59	0.01	9362	1209	605	1521
14	9	6	15	10	5	3032.8	913.59	0.13	9567	1239	610	1555
14	10	4	13	9	5	2655.1	1066.77	0.06	9867	1260	615	1574
14	10	4	13	11	3	2978.1	1066.77	0.00	9954	1299	622	1620
14	10	4	14	9	5	2690.1	1066.77	0.02	9690	1249	613	1566

14	10	4	14	11	3	3012.0	1066.77	0.02	9832	1285	619	1606
14	10	4	15	11	5	3048.3	1066.77	0.07	9727	1273	616	1594
15	1	14	14	2	13	2822.7	307.69	1.00	7641	1058	578	1320
15	1	14	15	0	15	2822.1	307.69	1.85	7241	1050	577	1314
15	1	14	15	2	13	2863.8	307.69	2.84	7126	1053	577	1324
15	1	14	16	2	15	2897.5	307.69	1.41	6976	1053	577	1322
15	2	14	14	1	13	2790.4	323.33	1.15	7500	1058	578	1320
15	2	14	15	1	15	2808.8	323.33	1.24	7465	1057	578	1319
15	2	14	15	3	13	2885.5	323.33	1.71	7519	1065	579	1336
15	2	14	16	1	15	2867.2	323.33	1.06	7115	1055	577	1323
15	2	14	16	3	13	2925.0	323.33	0.94	7354	1064	578	1337
15	3	12	14	2	13	2764.4	365.99	0.72	7856	1069	580	1332
15	3	12	14	4	11	2863.4	365.99	0.37	8090	1083	583	1357
15	3	12	15	2	13	2805.5	365.99	1.48	7412	1064	578	1338
15	3	12	15	4	11	2899.9	365.99	1.37	7755	1078	580	1357
15	3	12	16	4	13	2938.8	365.99	0.99	7563	1075	580	1354
15	4	12	14	3	11	2750.0	422.62	0.68	8067	1081	582	1354
15	4	12	15	3	13	2786.2	422.62	1.00	7770	1077	580	1358
15	4	12	15	5	11	2916.5	422.62	1.00	8043	1096	583	1383
15	4	12	16	3	13	2825.7	422.62	0.31	7594	1076	580	1357
15	4	12	16	5	11	2955.4	422.62	0.86	7859	1092	582	1380
15	5	10	14	4	11	2733.5	495.88	0.54	8347	1101	585	1382
15	5	10	14	6	9	2896.3	495.88	0.14	8628	1125	589	1415
15	5	10	15	4	11	2770.0	495.88	0.67	8042	1096	583	1383
15	5	10	15	6	9	2932.7	495.88	0.67	8323	1119	587	1413
15	5	10	16	6	11	2971.6	495.88	0.68	8140	1114	586	1408
15	6	10	14	5	9	2717.3	585.36	0.39	8616	1124	589	1413
15	6	10	15	5	11	2753.8	585.36	0.41	8323	1119	587	1413
15	6	10	15	7	9	2948.8	585.36	0.41	8598	1143	591	1443
15	6	10	16	5	11	2792.7	585.36	0.10	8148	1115	586	1410
15	6	10	16	7	9	2987.7	585.36	0.49	8417	1139	590	1439
15	7	8	14	6	9	2701.2	690.95	0.26	8883	1149	593	1445
15	7	8	14	8	7	2928.4	690.95	0.03	9136	1178	599	1483
15	7	8	15	6	9	2737.6	690.95	0.23	8598	1143	591	1443
15	7	8	15	8	7	2964.8	690.95	0.23	8862	1170	596	1477
15	7	8	16	8	9	3003.7	690.95	0.33	8686	1164	594	1470
15	8	8	14	7	7	2685.2	812.53	0.16	9134	1176	598	1480
15	8	8	15	7	9	2721.7	812.53	0.12	8862	1170	596	1477
15	8	8	15	9	7	2980.7	812.53	0.12	9110	1200	602	1512
15	8	8	16	7	9	2760.5	812.53	0.02	8688	1166	594	1473
15	8	8	16	9	7	3019.5	812.53	0.20	8939	1193	599	1504
15	9	6	14	8	7	2669.4	949.98	0.09	9364	1207	605	1518
15	9	6	14	10	5	2960.0	949.98	0.01	9558	1241	610	1558
15	9	6	15	8	7	2705.8	949.98	0.06	9110	1200	602	1512
15	9	6	15	10	5	2996.4	949.98	0.05	9337	1231	607	1548
15	9	6	16	10	7	3035.2	949.98	0.11	9176	1223	605	1539
15	10	6	14	9	5	2653.7	1103.14	0.05	9567	1239	610	1555
15	10	6	15	9	7	2690.1	1103.14	0.02	9337	1231	607	1548
15	10	6	15	11	5	3012.0	1103.14	0.02	9530	1263	613	1584
15	10	6	16	9	7	2728.9	1103.14	0.00	9172	1225	605	1541
15	10	6	16	11	5	3050.8	1103.14	0.06	9385	1253	611	1573
16	0	16	15	1	15	2808.0	324.12	2.43		1052	577	1314
16	0	16	16	1	15	2866.5	324.12	1.72		1048	576	1315
16	0	16	17	1	17	2884.8	324.12	2.75		1048	576	1316

16	1	16	15	0	15	2803.6	326.10	2.44	1050	577	1312
16	1	16	16	2	15	2879.1	326.10	1.30	1052	577	1320
16	1	16	17	0	17	2881.1	326.10	2.69	1047	576	1314
16	1	16	17	2	15	2927.5	326.10	0.28	1055	576	1325
16	2	14	15	1	15	2764.0	368.04	0.24	1056	578	1324
16	2	14	15	3	13	2840.8	368.04	0.48	1064	578	1339
16	2	14	16	1	15	2822.5	368.04	2.26	1051	575	1322
16	2	14	16	3	13	2880.3	368.04	1.64	1061	577	1337
16	2	14	17	3	15	2921.2	368.04	0.88	1060	577	1336
16	3	14	15	2	13	2766.9	404.58	0.67	1061	578	1335
16	3	14	16	2	15	2800.6	404.58	1.20	1061	577	1333
16	3	14	16	4	13	2900.2	404.58	1.23	1072	579	1351
16	3	14	17	2	15	2849.1	404.58	0.44	1062	577	1338
16	3	14	17	4	13	2941.6	404.58	0.84	1073	579	1352
16	4	12	15	3	13	2747.3	461.58	0.58	1074	580	1354
16	4	12	15	5	11	2877.5	461.58	0.23	1093	583	1381
16	4	12	16	3	13	2786.8	461.58	0.90	1073	579	1352
16	4	12	16	5	11	2916.4	461.58	0.89	1089	581	1377
16	4	12	17	5	13	2957.8	461.58	0.74	1089	581	1375
16	5	12	15	4	11	2731.1	534.78	0.46	1092	582	1380
16	5	12	16	4	13	2770.0	534.78	0.60	1089	581	1377
16	5	12	16	6	11	2932.7	534.78	0.60	1109	585	1405
16	5	12	17	4	13	2811.4	534.78	0.17	1090	581	1377
16	5	12	17	6	11	2974.0	534.78	0.58	1108	584	1401
16	6	10	15	5	11	2714.9	624.23	0.34	1114	586	1408
16	6	10	15	7	9	2910.0	624.23	0.07	1140	590	1440
16	6	10	16	5	11	2753.8	624.23	0.37	1109	585	1405
16	6	10	16	7	9	2948.8	624.23	0.37	1134	588	1434
16	6	10	17	7	11	2990.1	624.23	0.42	1130	588	1429
16	7	10	15	6	9	2698.8	729.80	0.22	1139	590	1439
16	7	10	16	6	11	2737.7	729.80	0.21	1134	588	1434
16	7	10	16	8	9	2964.8	729.80	0.21	1160	593	1465
16	7	10	17	6	11	2779.0	729.80	0.05	1132	588	1430
16	7	10	17	8	9	3006.1	729.80	0.28	1155	592	1458
16	8	8	15	7	9	2682.8	851.37	0.14	1164	594	1470
16	8	8	15	9	7	2941.8	851.37	0.02	1195	600	1506
16	8	8	16	7	9	2721.7	851.37	0.11	1160	593	1465
16	8	8	16	9	7	2980.7	851.37	0.11	1187	598	1497
16	8	8	17	9	9	3021.9	851.37	0.17	1181	596	1489
16	9	8	15	8	7	2667.0	988.79	0.08	1193	599	1504
16	9	8	16	8	9	2705.8	988.79	0.05	1187	598	1497
16	9	8	16	10	7	2996.4	988.79	0.05	1216	603	1530
16	9	8	17	8	9	2747.1	988.79	0.01	1183	597	1491
16	9	8	17	10	7	3037.6	988.79	0.10	1209	601	1520
16	10	6	15	9	7	2651.3	1141.95	0.04	1223	605	1539
16	10	6	15	11	5	2973.2	1141.95	0.00	1255	611	1575
16	10	6	16	9	7	2690.1	1141.95	0.02	1216	603	1530
16	10	6	16	11	5	3012.0	1141.95	0.02	1245	609	1564
16	10	6	17	11	7	3053.2	1141.95	0.05	1237	607	1553
17	1	16	16	2	15	2815.8	389.37	0.85	1054	576	1325
17	1	16	17	0	17	2817.9	389.37	1.22	1047	575	1315
17	1	16	17	2	15	2864.3	389.37	2.21	1052	576	1321
17	1	16	18	2	17	2900.1	389.37	1.13	1052	576	1321
17	2	16	16	1	15	2787.7	402.90	0.94	1051	575	1321

17	2	16	17	1	17	2806.0	402.90	0.90	1050	575	1321
17	2	16	17	3	15	2886.3	402.90	1.32	1060	576	1333
17	2	16	18	1	17	2874.1	402.90	0.91	1054	575	1325
17	2	16	18	3	15	2931.2	402.90	0.64	1061	576	1336
17	3	14	16	2	15	2758.4	446.76	0.49	1060	577	1337
17	3	14	16	4	13	2858.0	446.76	0.30	1072	579	1353
17	3	14	17	2	15	2806.9	446.76	1.20	1059	577	1333
17	3	14	17	4	13	2899.5	446.76	1.08	1072	578	1349
17	3	14	18	4	15	2943.3	446.76	0.71	1073	578	1350
17	4	14	16	3	13	2745.4	502.95	0.49	1074	579	1353
17	4	14	17	3	15	2786.3	502.95	0.79	1073	578	1350
17	4	14	17	5	13	2916.4	502.95	0.79	1090	581	1372
17	4	14	18	3	15	2831.2	502.95	0.25	1075	578	1354
17	4	14	18	5	13	2960.2	502.95	0.62	1089	581	1372
17	5	12	16	4	13	2728.7	576.12	0.39	1089	581	1375
17	5	12	16	6	11	2891.4	576.12	0.12	1110	584	1403
17	5	12	17	4	13	2770.1	576.12	0.53	1090	581	1372
17	5	12	17	6	11	2932.7	576.12	0.53	1107	584	1397
17	5	12	18	6	13	2976.4	576.12	0.49	1107	584	1396
17	6	12	16	5	11	2712.5	665.54	0.28	1108	584	1401
17	6	12	17	5	13	2753.8	665.54	0.32	1107	584	1397
17	6	12	17	7	11	2948.8	665.54	0.33	1128	587	1424
17	6	12	18	5	13	2797.6	665.54	0.09	1108	584	1397
17	6	12	18	7	11	2992.5	665.54	0.35	1126	587	1421
17	7	10	16	6	11	2696.4	771.09	0.19	1130	588	1429
17	7	10	16	8	9	2923.5	771.09	0.03	1157	592	1460
17	7	10	17	6	11	2737.7	771.09	0.18	1128	587	1424
17	7	10	17	8	9	2964.8	771.09	0.19	1152	591	1452
17	7	10	18	8	11	3003.5	771.09	0.23	1149	591	1449
17	8	10	16	7	9	2680.4	892.63	0.11	1155	592	1458
17	8	10	17	7	11	2721.7	892.63	0.10	1152	591	1452
17	8	10	17	9	9	2980.7	892.63	0.10	1177	595	1482
17	8	10	18	7	11	2765.4	892.63	0.02	1150	591	1451
17	8	10	18	9	9	3024.3	892.63	0.14	1174	595	1477
17	9	8	16	8	9	2664.6	1030.05	0.06	1181	596	1489
17	9	8	16	10	7	2955.1	1030.05	0.01	1210	601	1523
17	9	8	17	8	9	2705.8	1030.05	0.05	1177	595	1482
17	9	8	17	10	7	2996.4	1030.05	0.05	1203	600	1512
17	9	8	18	10	9	3040.1	1030.05	0.08	1198	599	1507
17	10	8	16	9	7	2648.9	1183.18	0.03	1209	601	1520
17	10	8	17	9	9	2690.1	1183.18	0.02	1203	600	1512
17	10	8	17	11	7	3011.9	1183.18	0.02	1231	605	1544
17	10	8	18	9	9	2733.8	1183.18	0.00	1200	599	1509
17	10	8	18	11	7	3055.6	1183.18	0.04	1225	604	1538
18	0	18	17	1	17	2802.8	406.09	1.93	1046	575	1315
18	0	18	18	1	17	2870.9	406.09	1.12	1049	575	1318
18	0	18	19	1	19	2888.8	406.09	2.15	1048	574	1315
18	1	18	17	0	17	2799.7	407.48	1.93	1045	575	1314
18	1	18	18	2	17	2882.0	407.48	0.93	1051	575	1319
18	1	18	19	0	19	2886.2	407.48	2.13	1049	574	1317
18	1	18	19	2	17	2938.5	407.48	0.16	1062	575	1339
18	2	16	17	1	17	2753.6	455.28	0.13	1056	576	1331
18	2	16	17	3	15	2833.9	455.28	0.37	1065	577	1341
18	2	16	18	1	17	2821.7	455.28	1.67	1058	575	1330

18	2	16	18	3	15	2878.9	455.28	1.29	1065	576	1343
18	2	16	19	3	17	2924.1	455.28	0.63	1068	577	1345
18	3	16	17	2	15	2763.8	489.82	0.49	1062	577	1336
18	3	16	18	2	17	2799.7	489.82	0.89	1063	577	1335
18	3	16	18	4	15	2900.2	489.82	0.93	1075	579	1354
18	3	16	19	2	17	2856.1	489.82	0.35	1071	577	1347
18	3	16	19	4	15	2946.6	489.82	0.59	1078	578	1359
18	4	14	17	3	15	2742.4	546.84	0.41	1074	579	1352
18	4	14	17	5	13	2872.5	546.84	0.18	1091	581	1374
18	4	14	18	3	15	2787.3	546.84	0.69	1075	578	1354
18	4	14	18	5	13	2916.3	546.84	0.68	1090	581	1373
18	4	14	19	5	15	2962.5	546.84	0.52	1092	581	1377
18	5	14	17	4	13	2726.3	619.90	0.33	1089	581	1372
18	5	14	18	4	15	2770.1	619.90	0.46	1090	581	1373
18	5	14	18	6	13	2932.6	619.90	0.46	1107	584	1394
18	5	14	19	4	15	2816.5	619.90	0.14	1094	581	1380
18	5	14	19	6	13	2978.8	619.90	0.41	1109	583	1399
18	6	12	17	5	13	2710.1	709.29	0.23	1107	584	1396
18	6	12	17	7	11	2905.0	709.29	0.06	1127	587	1423
18	6	12	18	5	13	2753.9	709.29	0.28	1107	584	1394
18	6	12	18	7	11	2948.8	709.29	0.29	1126	587	1420
18	6	12	19	7	13	2994.9	709.29	0.29	1128	586	1423
18	7	12	17	6	11	2694.0	814.81	0.15	1126	587	1421
18	7	12	18	6	13	2737.7	814.81	0.16	1126	587	1420
18	7	12	18	8	11	2964.8	814.81	0.17	1147	590	1447
18	7	12	19	6	13	2783.9	814.81	0.04	1129	586	1425
18	7	12	19	8	11	3010.9	814.81	0.19	1148	590	1449
18	8	10	17	7	11	2678.0	936.34	0.09	1149	591	1449
18	8	10	17	9	9	2936.9	936.34	0.01	1175	595	1479
18	8	10	18	7	11	2721.7	936.34	0.08	1147	590	1447
18	8	10	18	9	9	2980.6	936.34	0.09	1171	594	1474
18	8	10	19	9	11	3026.8	936.34	0.12	1171	593	1475
18	9	10	17	8	9	2662.1	1073.73	0.05	1174	595	1477
18	9	10	18	8	11	2705.8	1073.73	0.04	1171	594	1474
18	9	10	18	10	9	2996.4	1073.73	0.04	1195	598	1503
18	9	10	19	8	11	2752.0	1073.73	0.01	1172	594	1476
18	9	10	19	10	9	3042.5	1073.73	0.07	1194	597	1502
18	10	8	17	9	9	2646.4	1226.86	0.03	1198	599	1507
18	10	8	17	11	7	2968.3	1226.86	0.00	1227	604	1540
18	10	8	18	9	9	2690.1	1226.86	0.02	1195	598	1503
18	10	8	18	11	7	3011.9	1226.86	0.02	1221	603	1532
18	10	3	19	11	9	3058.0	1226.86	0.03	1218	602	1530
19	1	18	18	2	17	2808.9	480.54	0.69	1060	575	1335
19	1	18	19	0	19	2813.1	480.54	0.76	1057	574	1329
19	1	18	19	2	17	2865.4	480.54	1.57	1065	576	1342
19	1	18	20	2	19	2902.7	480.54	0.87	1066	575	1343
19	2	18	18	1	17	2785.1	491.93	0.72	1058	575	1330
19	2	18	19	1	19	2802.9	491.93	0.61	1057	575	1330
19	2	18	19	3	17	2887.4	491.93	0.96	1068	577	1345
19	2	18	20	1	19	2881.0	491.93	0.74	1066	575	1344
19	2	18	20	3	17	2938.0	491.93	0.41	1075	576	1354
19	3	16	18	2	17	2751.9	537.55	0.31	1067	576	1346
19	3	16	18	4	15	2852.5	537.55	0.23	1079	578	1362
19	3	16	19	2	17	2808.4	537.55	0.92	1073	577	1354

19	3	16	19	4	15	2898.8	537.55	0.80	1082	578	1366
19	3	16	20	4	17	2947.5	537.55	0.49	1085	578	1370
19	4	16	18	3	15	2741.1	593.07	0.34	1078	578	1360
19	4	16	19	3	17	2786.3	593.07	0.58	1081	578	1362
19	4	16	19	5	15	2916.3	593.07	0.58	1094	580	1381
19	4	16	20	3	17	2836.9	593.07	0.19	1088	578	1371
19	4	16	20	5	15	2965.0	593.07	0.43	1098	580	1386
19	5	14	18	4	15	2723.9	666.13	0.27	1092	581	1377
19	5	14	18	6	13	2886.4	666.13	0.10	1110	584	1400
19	5	14	19	4	15	2770.3	666.13	0.39	1094	580	1382
19	5	14	19	6	13	2932.6	666.13	0.39	1110	583	1402
19	5	14	20	6	15	2981.2	666.13	0.33	1113	582	1406
19	6	14	18	5	13	2707.7	755.47	0.19	1109	583	1399
19	6	14	19	5	15	2753.9	755.47	0.24	1110	583	1402
19	6	14	19	7	13	2948.7	755.47	0.25	1129	586	1427
19	6	14	20	5	15	2802.6	755.47	0.07	1114	583	1408
19	6	14	20	7	13	2997.3	755.47	0.24	1132	585	1429
19	7	12	18	6	13	2691.6	860.97	0.13	1128	586	1423
19	7	12	18	8	11	2918.6	860.97	0.03	1149	590	1451
19	7	12	19	6	13	2737.7	860.97	0.14	1129	586	1427
19	7	12	19	8	11	2964.7	860.97	0.14	1149	589	1450
19	7	12	20	8	13	3013.3	860.97	0.16	1151	589	1452
19	8	12	18	7	11	2675.6	982.48	0.08	1146	590	1449
19	8	12	19	7	13	2721.7	982.48	0.07	1149	589	1450
19	8	12	19	9	11	2980.6	982.48	0.08	1171	593	1475
19	8	12	20	7	13	2770.3	982.48	0.02	1153	589	1454
19	8	12	20	9	11	3029.2	982.48	0.10	1172	592	1475
19	9	10	18	8	11	2659.7	1119.86	0.04	1171	593	1475
19	9	10	18	10	9	2950.2	1119.86	0.01	1190	598	1504
19	9	10	19	8	11	2705.9	1119.86	0.04	1171	593	1475
19	9	10	19	10	9	2996.4	1119.86	0.04	1194	597	1501
19	9	10	20	10	11	3044.9	1119.86	0.05	1194	596	1500
19	10	10	18	9	9	2644.0	1272.97	0.02	1194	597	1502
19	10	10	19	9	11	2690.1	1272.97	0.02	1194	597	1501
19	10	10	19	11	9	3011.9	1272.97	0.02	1217	601	1528
19	10	10	20	9	11	2738.7	1272.97	0.00	1195	596	1502
19	10	10	20	11	9	3060.5	1272.97	0.03	1216	600	1526
20	0	20	19	1	19	2797.8	497.05	1.44	1055	575	1328
20	0	20	20	1	19	2875.8	497.05	0.71	1063	575	1340
20	0	20	21	1	21	2892.9	497.05	1.59	1062	575	1338
20	1	20	19	0	19	2795.7	498.00	1.43	1055	575	1326
20	1	20	20	2	19	2885.2	498.00	0.62	1065	575	1340
20	1	20	21	0	21	2891.1	498.00	1.57	1063	574	1337
20	1	20	21	2	19	2950.3	498.00	0.08	1072	575	1345
20	2	18	19	1	19	2742.2	552.62	0.06	1067	576	1343
20	2	18	19	3	17	2826.7	552.62	0.28	1077	577	1357
20	2	18	20	1	19	2820.3	552.62	1.13	1074	575	1349
20	2	18	20	3	17	2877.3	552.62	0.96	1082	576	1361
20	2	18	21	3	19	2926.5	552.62	0.44	1082	576	1358
20	3	18	19	2	17	2761.1	584.79	0.34	1077	577	1357
20	3	18	20	2	19	2798.4	584.79	0.62	1078	576	1356
20	3	18	20	4	17	2900.3	584.79	0.67	1090	578	1373
20	3	18	21	2	19	2863.5	584.79	0.26	1082	576	1357
20	3	18	21	4	17	2951.6	584.79	0.39	1091	578	1371

20	4	16	19	3	17	2737.4	641.91	0.27	1085	578	1368
20	4	16	19	5	15	2867.5	641.91	0.14	1099	580	1387
20	4	16	20	3	17	2788.1	641.91	0.49	1091	577	1374
20	4	16	20	5	15	2916.1	641.91	0.49	1102	580	1390
20	4	15	21	5	17	2967.2	641.91	0.34	1103	579	1389
20	5	16	19	4	15	2721.6	714.79	0.22	1098	580	1387
20	5	16	20	4	17	2770.3	714.79	0.33	1102	580	1390
20	5	15	20	6	15	2932.5	714.79	0.33	1117	582	1410
20	5	16	21	4	17	2821.6	714.79	0.10	1105	580	1389
20	5	16	21	6	15	2983.6	714.79	0.27	1118	582	1407
20	6	14	19	5	15	2705.3	804.10	0.16	1113	582	1406
20	6	14	19	7	13	2900.1	804.10	0.05	1133	586	1430
20	6	14	20	5	15	2753.9	804.10	0.20	1117	582	1410
20	6	14	20	7	13	2948.7	804.10	0.21	1134	585	1431
20	6	14	21	7	15	2999.7	804.10	0.19	1134	585	1431
20	7	14	19	6	13	2689.1	909.57	0.10	1132	585	1429
20	7	14	20	6	15	2737.8	909.57	0.12	1134	585	1431
20	7	14	20	8	13	2964.7	909.57	0.12	1153	588	1453
20	7	14	21	6	15	2788.8	909.57	0.03	1135	585	1431
20	7	14	21	8	13	3015.7	909.57	0.13	1153	588	1451
20	8	12	19	7	13	2673.2	1031.05	0.06	1151	589	1452
20	8	12	19	9	11	2932.0	1031.05	0.01	1173	592	1477
20	8	12	20	7	13	2721.8	1031.05	0.06	1153	588	1453
20	8	12	20	9	11	2980.6	1031.05	0.06	1173	592	1476
20	8	12	21	9	13	3031.6	1031.05	0.08	1172	591	1473
20	9	12	19	8	11	2657.3	1168.42	0.03	1172	592	1475
20	9	12	20	8	13	2705.9	1168.42	0.03	1173	592	1476
20	9	12	20	10	11	2996.3	1168.42	0.03	1194	595	1500
20	9	12	21	8	13	2756.9	1168.42	0.01	1173	591	1474
20	9	12	21	10	11	3047.3	1168.42	0.04	1191	595	1498
20	10	10	19	9	11	2641.6	1321.52	0.02	1194	596	1500
20	10	10	19	11	9	2963.4	1321.52	0.00	1217	601	1527
20	10	10	20	9	11	2690.1	1321.52	0.01	1194	595	1500
20	10	10	20	11	9	3011.9	1321.52	0.01	1215	599	1525
20	10	10	21	11	11	3062.9	1321.52	0.02	1212	599	1521
21	1	20	20	2	19	2802.1	581.08	0.52	1075	575	1348
21	1	20	21	0	21	2808.1	581.08	0.46	1072	574	1345
21	1	20	21	2	19	2867.2	581.08	1.02	1078	575	1345
21	1	20	22	2	21	2905.3	581.08	0.63	1076	575	1344
21	2	20	20	1	19	2782.5	590.38	0.53	1073	575	1348
21	2	20	21	1	21	2799.5	590.38	0.39	1072	575	1346
21	2	20	21	3	19	2888.8	590.38	0.65	1081	576	1356
21	2	20	22	1	21	2887.7	590.38	0.57	1076	575	1343
21	2	20	22	3	19	2945.6	590.38	0.24	1082	576	1353
21	3	18	20	2	19	2744.8	638.44	0.18	1082	576	1357
21	3	18	20	4	17	2846.6	638.44	0.16	1092	578	1373
21	3	18	21	2	19	2809.9	638.44	0.67	1085	576	1355
21	3	18	21	4	17	2897.9	638.44	0.55	1094	577	1371
21	3	18	22	4	19	2951.4	638.44	0.31	1093	577	1367
21	4	18	20	3	17	2737.0	692.99	0.22	1091	577	1373
21	4	18	21	3	19	2786.2	692.99	0.40	1091	577	1371
21	4	18	21	5	17	2916.2	692.99	0.40	1104	579	1387
21	4	18	22	3	19	2843.0	692.99	0.13	1093	577	1367
21	4	18	22	5	17	2969.7	692.99	0.28	1105	579	1383

21	5	16	20	4	17	2719.1	765.91	0.17	1103	579	1389
21	5	16	20	6	15	2881.4	765.91	0.07	1119	582	1410
21	5	16	21	4	17	2770.5	765.91	0.27	1105	579	1387
21	5	16	21	6	15	2932.5	765.91	0.28	1119	582	1406
21	5	16	22	6	17	2986.0	765.91	0.22	1118	581	1402
21	6	16	20	5	15	2702.9	855.16	0.13	1118	582	1407
21	6	16	21	5	17	2754.0	855.16	0.17	1119	582	1406
21	6	16	21	7	15	2948.7	855.16	0.17	1135	584	1427
21	6	16	22	5	17	2807.5	855.16	0.05	1119	581	1403
21	6	16	22	7	15	3002.2	855.16	0.16	1135	584	1421
21	7	14	20	6	15	2686.7	960.60	0.08	1134	585	1431
21	7	14	20	8	13	2913.7	960.60	0.02	1153	588	1452
21	7	14	21	6	15	2737.8	960.60	0.10	1135	584	1427
21	7	14	21	8	13	2964.7	960.60	0.10	1152	587	1450
21	7	14	22	8	15	3018.2	960.60	0.10	1151	587	1442
21	8	14	20	7	13	2670.7	1082.07	0.05	1153	588	1451
21	8	14	21	7	15	2721.8	1082.07	0.05	1152	587	1450
21	8	14	21	9	13	2980.6	1082.07	0.05	1171	591	1470
21	8	14	22	7	15	2775.2	1082.07	0.01	1153	587	1442
21	8	14	22	9	13	3034.0	1082.07	0.06	1170	590	1463
21	9	12	20	8	13	2654.9	1219.42	0.03	1172	591	1473
21	9	12	20	10	11	2945.3	1219.42	0.00	1192	595	1498
21	9	12	21	8	13	2705.9	1219.42	0.03	1171	591	1470
21	9	12	21	10	11	2996.3	1219.42	0.03	1190	594	1493
21	9	12	22	10	13	3049.8	1219.42	0.03	1187	594	1485
21	10	12	20	9	11	2639.1	1372.51	0.01	1191	595	1498
21	10	12	21	9	13	2690.2	1372.51	0.01	1190	594	1493
21	10	12	21	11	11	3011.9	1372.51	0.01	1210	598	1518
21	10	12	22	9	13	2743.6	1372.51	0.00	1188	594	1487
21	10	12	22	11	11	3065.3	1372.51	0.02	1206	598	1508
22	0	22	21	1	21	2792.9	596.99	1.00	1070	574	1343
22	0	22	22	1	21	2881.1	596.99	0.43	1073	574	1340
22	0	22	23	1	23	2897.1	596.99	1.10	1072	575	1341
22	1	22	21	0	21	2791.5	597.63	1.00	1071	574	1344
22	1	22	22	2	21	2888.7	597.63	0.40	1076	574	1343
22	1	22	23	0	23	2895.9	597.63	1.10	1074	574	1340
22	1	22	23	2	21	2963.0	597.63	0.04	1077	574	1336
22	2	20	21	1	21	2729.9	659.99	0.03	1075	575	1343
22	2	20	21	3	19	2819.2	659.99	0.19	1082	576	1351
22	2	20	22	1	21	2818.1	659.99	0.70	1075	574	1333
22	2	20	22	3	19	2876.0	659.99	0.67	1080	575	1341
22	2	20	23	3	21	2928.7	659.99	0.29	1081	574	1335
22	3	20	21	2	19	2758.8	689.47	0.22	1084	576	1350
22	3	20	22	2	21	2796.9	689.47	0.41	1082	575	1347
22	3	20	22	4	19	2900.4	689.47	0.45	1092	576	1360
22	3	20	23	2	21	2871.2	689.47	0.19	1082	575	1338
22	3	20	23	4	19	2956.8	689.47	0.24	1090	576	1352
22	4	18	21	3	19	2732.3	746.85	0.17	1090	577	1368
22	4	18	21	5	17	2862.3	746.85	0.09	1103	579	1385
22	4	18	22	3	19	2789.1	746.85	0.34	1091	577	1359
22	4	18	22	5	17	2915.9	746.85	0.33	1103	578	1376
22	4	18	23	5	19	2971.9	746.85	0.22	1102	578	1368
22	5	18	21	4	17	2716.9	819.46	0.14	1105	579	1383
22	5	18	22	4	19	2770.4	819.46	0.22	1104	578	1376

22	5	18	22	6	17	2932.4	819.46	0.23	1118	581	1394
22	5	18	23	4	19	2826.8	819.46	0.07	1103	578	1368
22	5	18	23	6	17	2988.4	819.46	0.17	1116	580	1386
22	6	16	21	5	17	2700.5	908.66	0.10	1118	581	1402
22	6	16	21	7	15	2895.2	908.66	0.03	1136	584	1422
22	6	16	22	5	17	2754.0	908.66	0.14	1118	581	1394
22	6	16	22	7	15	2948.6	908.66	0.14	1134	583	1413
22	6	16	23	7	17	3004.6	908.66	0.12	1132	583	1406
22	7	16	21	6	15	2684.3	1014.07	0.06	1135	584	1421
22	7	16	22	6	17	2737.8	1014.07	0.08	1134	583	1413
22	7	16	22	8	15	2964.7	1014.07	0.08	1150	586	1434
22	7	16	23	6	17	2793.8	1014.07	0.02	1133	583	1406
22	7	16	23	8	15	3020.6	1014.07	0.08	1148	586	1426
22	8	14	21	7	15	2668.3	1135.52	0.04	1151	587	1442
22	8	14	21	9	13	2927.1	1135.52	0.01	1171	590	1465
22	8	14	22	7	15	2721.8	1135.52	0.04	1150	586	1434
22	8	14	22	9	13	2980.6	1135.52	0.04	1167	590	1456
22	8	14	23	9	15	3036.5	1135.52	0.05	1164	589	1447
22	9	14	21	8	13	2652.4	1272.86	0.02	1170	590	1463
22	9	14	22	8	15	2705.9	1272.86	0.02	1167	590	1456
22	9	14	22	10	13	2996.3	1272.86	0.02	1186	594	1478
22	9	14	23	8	15	2761.8	1272.86	0.00	1165	589	1448
22	9	14	23	10	13	3052.2	1272.86	0.03	1183	592	1469
22	10	12	21	9	13	2636.7	1425.94	0.01	1187	594	1485
22	10	12	21	11	11	2958.5	1425.94	0.00	1207	598	1509
22	10	12	22	9	13	2690.2	1425.94	0.01	1186	594	1478
22	10	12	22	11	11	3011.9	1425.94	0.01	1204	597	1499
22	10	12	23	11	13	3067.8	1425.94	0.01	1201	596	1490
23	1	22	22	2	21	2795.5	690.83	0.37	1075	574	1332
23	1	22	23	0	23	2802.7	690.83	0.26	1073	574	1327
23	1	22	23	2	21	2869.8	690.83	0.62	1075	572	1318
23	1	22	24	2	23	2908.0	690.83	0.44	1074	572	1317
23	2	22	22	1	21	2779.8	698.20	0.37	1074	574	1329
23	2	22	23	1	23	2795.9	698.20	0.24	1073	575	1331
23	2	22	23	3	21	2890.5	698.20	0.42	1080	574	1332
23	2	22	24	1	23	2894.2	698.20	0.41	1077	572	1318
23	2	22	24	3	21	2954.0	698.20	0.13	1084	572	1328
23	3	20	22	2	21	2736.8	749.54	0.10	1082	575	1341
23	3	20	22	4	19	2840.3	749.54	0.11	1091	576	1355
23	3	20	23	2	21	2811.1	749.54	0.46	1081	572	1324
23	3	20	23	4	19	2896.7	749.54	0.36	1090	575	1343
23	3	20	24	4	21	2954.9	749.54	0.19	1091	574	1331
23	4	20	22	3	19	2733.2	802.70	0.13	1090	576	1350
23	4	20	23	3	21	2786.0	802.70	0.26	1090	575	1344
23	4	20	23	5	19	2916.0	802.70	0.27	1101	578	1359
23	4	20	24	3	21	2849.5	802.70	0.09	1092	573	1337
23	4	20	24	5	19	2974.5	802.70	0.17	1101	576	1351
23	5	18	22	4	19	2714.4	875.48	0.11	1102	578	1368
23	5	18	22	6	17	2876.4	875.48	0.05	1117	581	1385
23	5	18	23	4	19	2770.8	875.48	0.18	1101	577	1360
23	5	18	23	6	17	2932.4	875.48	0.18	1115	580	1377
23	5	18	24	6	19	2990.8	875.48	0.13	1113	578	1370
23	6	18	22	5	17	2698.1	964.61	0.08	1116	580	1386
23	6	18	23	5	19	2754.1	964.61	0.11	1115	580	1377

23	6	18	23	7	17	2948.6	964.61	0.11	1130	582	1396
23	6	18	24	5	19	2812.6	964.61	0.03	1114	579	1369
23	6	18	24	7	17	3007.0	964.61	0.10	1127	580	1387
23	7	16	22	6	17	2681.9	1069.99	0.05	1132	583	1406
23	7	16	22	8	15	2908.8	1069.99	0.02	1148	586	1427
23	7	16	23	6	17	2737.9	1069.99	0.06	1130	582	1396
23	7	16	23	8	15	2964.7	1069.99	0.07	1146	584	1417
23	7	16	24	8	17	3023.0	1069.99	0.06	1143	583	1407
23	8	16	22	7	15	2665.9	1191.42	0.03	1148	586	1426
23	8	16	23	7	17	2721.8	1191.42	0.03	1146	584	1417
23	8	16	23	9	15	2980.6	1191.42	0.04	1162	588	1437
23	8	16	24	7	17	2780.2	1191.42	0.01	1143	583	1408
23	8	16	24	9	15	3038.9	1191.42	0.04	1158	586	1429
23	9	14	22	8	15	2650.0	1328.75	0.02	1164	589	1447
23	9	14	22	10	13	2940.4	1328.75	0.00	1183	593	1469
23	9	14	23	8	15	2705.9	1328.75	0.02	1162	588	1437
23	9	14	23	10	13	2996.3	1328.75	0.02	1179	591	1458
23	9	14	24	10	15	3054.6	1328.75	0.02	1175	590	1449
23	10	14	22	9	13	2634.3	1481.83	0.01	1183	592	1469
23	10	14	23	9	15	2690.2	1481.83	0.01	1179	591	1458
23	10	14	23	11	13	3011.9	1481.83	0.01	1197	595	1481
23	10	14	24	9	15	2748.5	1481.83	0.00	1176	590	1450
23	10	14	24	11	13	3070.2	1481.83	0.01	1193	593	1470
24	0	24	23	1	23	2788.2	705.92	0.66	1072	574	1329
24	0	24	24	1	23	2886.4	705.92	0.25	1075	572	1315
24	0	24	25	1	25	2901.4	705.92	0.73	1072	571	1315
24	1	24	23	0	23	2787.2	706.34	0.66	1072	574	1328
24	1	24	24	2	23	2892.5	706.34	0.24	1073	573	1318
24	1	24	25	0	25	2900.7	706.34	0.72	1072	571	1315
24	1	24	25	2	23	2976.5	706.34	0.02	1080	569	1317
24	2	22	23	1	23	2716.8	777.26	0.01	1080	572	1328
24	2	22	23	3	21	2811.4	777.26	0.13	1083	571	1321
24	2	22	24	1	23	2815.1	777.26	0.40	1077	569	1299
24	2	22	24	3	21	2874.9	777.26	0.44	1081	569	1308
24	2	22	25	3	23	2930.6	777.26	0.18	1081	568	1303
24	3	22	23	2	21	2756.8	803.83	0.14	1080	572	1317
24	3	22	24	2	23	2795.0	803.83	0.25	1079	572	1315
24	3	22	24	4	21	2900.7	803.83	0.29	1089	573	1325
24	3	22	25	2	23	2879.0	803.83	0.13	1082	569	1308
24	3	22	25	4	21	2962.2	803.83	0.14	1089	571	1324
24	4	20	23	3	21	2727.0	861.68	0.10	1090	573	1335
24	4	20	23	5	19	2857.0	861.68	0.06	1102	575	1351
24	4	20	24	3	21	2790.5	861.68	0.22	1091	571	1326
24	4	20	24	5	19	2915.5	861.68	0.21	1099	574	1341
24	4	20	25	5	21	2976.4	861.68	0.13	1100	572	1337
24	5	20	23	4	19	2712.3	933.92	0.08	1101	576	1351
24	5	20	24	4	21	2770.6	933.92	0.14	1100	575	1340
24	5	20	24	6	19	2932.3	933.92	0.14	1112	577	1359
24	5	20	25	4	21	2832.1	933.92	0.04	1100	573	1339
24	5	20	25	6	19	2993.2	933.92	0.10	1112	575	1354
24	6	18	23	5	19	2695.7	1023.01	0.06	1113	578	1369
24	6	18	23	7	17	2890.2	1023.01	0.02	1127	580	1388
24	6	18	24	5	19	2754.2	1023.01	0.09	1112	577	1359
24	6	18	24	7	17	2948.6	1023.01	0.09	1126	579	1379

24	6	18	25	7	19	3009.4	1023.01	0.07	1126	578	1373
24	7	18	23	6	17	2679.5	1128.35	0.04	1127	580	1387
24	7	19	24	6	19	2737.9	1128.35	0.05	1126	579	1379
24	7	18	24	8	17	2964.7	1128.35	0.05	1141	581	1398
24	7	18	25	6	19	2798.7	1128.35	0.01	1127	577	1374
24	7	18	25	8	17	3025.4	1128.35	0.05	1140	580	1394
24	8	15	23	7	17	2663.5	1249.76	0.02	1143	583	1407
24	8	16	23	9	15	2922.2	1249.76	0.01	1159	586	1429
24	8	16	24	7	17	2721.8	1249.76	0.03	1141	581	1398
24	8	16	24	9	15	2980.6	1249.76	0.03	1157	585	1419
24	8	16	25	9	17	3041.3	1249.76	0.03	1156	584	1413
24	9	16	23	8	15	2647.6	1387.08	0.01	1158	586	1429
24	9	16	24	8	17	2705.9	1387.08	0.01	1157	585	1419
24	9	16	24	10	15	2996.3	1387.08	0.01	1174	588	1440
24	9	16	25	8	17	2766.7	1387.08	0.00	1157	584	1415
24	9	16	25	10	15	3057.1	1387.08	0.02	1172	587	1434
24	10	14	23	9	15	2631.8	1540.16	0.01	1175	590	1449
24	10	14	23	11	13	2953.6	1540.16	0.00	1194	593	1471
24	10	14	24	9	15	2690.2	1540.16	0.01	1174	588	1440
24	10	14	24	11	13	3011.9	1540.16	0.01	1189	592	1461
24	10	14	25	11	15	3072.7	1540.16	0.01	1189	591	1455
25	1	24	24	2	23	2789.2	809.67	0.25	1076	569	1302
25	1	24	25	0	25	2797.3	809.67	0.15	1073	568	1298
25	1	24	25	2	23	2873.1	809.67	0.35	1077	566	1294
25	1	24	26	2	25	2911.0	809.67	0.29	1076	566	1292
25	2	24	24	1	23	2777.0	815.34	0.25	1075	569	1298
25	2	24	25	1	25	2792.0	815.34	0.14	1073	569	1300
25	2	24	25	3	23	2892.5	815.34	0.25	1080	568	1302
25	2	24	26	1	25	2900.4	815.34	0.27	1075	567	1294
25	2	24	26	3	23	2963.3	815.34	0.06	1085	567	1304
25	3	22	24	2	23	2728.0	870.89	0.05	1083	570	1313
25	3	22	24	4	21	2833.6	870.89	0.06	1092	570	1323
25	3	22	25	2	23	2811.9	870.89	0.29	1083	566	1300
25	3	22	25	4	21	2895.2	870.89	0.23	1090	568	1317
25	3	22	26	4	23	2958.0	870.89	0.11	1092	567	1312
25	4	22	24	3	21	2729.9	922.23	0.08	1090	570	1321
25	4	22	25	3	23	2785.6	922.23	0.16	1090	569	1314
25	4	22	25	5	21	2915.8	922.23	0.17	1099	571	1330
25	4	22	26	3	23	2856.4	922.23	0.05	1095	568	1313
25	4	22	26	5	21	2979.2	922.23	0.10	1100	569	1327
25	5	20	24	4	21	2709.6	994.86	0.06	1100	573	1335
25	5	20	24	6	19	2871.4	994.86	0.03	1113	575	1354
25	5	20	25	4	21	2771.2	994.86	0.11	1099	571	1331
25	5	20	25	6	19	2932.2	994.86	0.11	1112	573	1347
25	5	20	26	6	21	2995.5	994.86	0.08	1113	571	1345
25	6	20	24	5	19	2693.3	1083.85	0.05	1112	575	1354
25	6	20	25	5	21	2754.2	1083.85	0.07	1112	573	1348
25	6	20	25	7	19	2948.5	1083.85	0.07	1126	576	1366
25	6	20	26	5	21	2817.6	1083.85	0.02	1113	572	1345
25	6	20	26	7	19	3011.8	1083.85	0.06	1126	574	1362
25	7	18	24	6	19	2677.1	1189.15	0.03	1126	578	1373
25	7	18	24	8	17	2903.8	1189.15	0.01	1141	581	1393
25	7	18	25	6	19	2737.9	1189.15	0.04	1126	576	1366
25	7	18	25	8	17	2964.6	1189.15	0.04	1140	579	1386

25	7	18	26	8	19	3027.9	1189.15	0.04	1140	577	1383
25	8	18	24	7	17	2661.0	1310.55	0.02	1140	580	1394
25	8	18	25	7	19	2721.8	1310.55	0.02	1140	579	1386
25	8	18	25	9	17	2980.6	1310.55	0.02	1156	582	1406
25	8	18	26	7	19	2785.1	1310.55	0.01	1141	577	1383
25	8	18	26	9	17	3043.8	1310.55	0.02	1155	580	1403
25	9	16	24	8	17	2645.1	1447.86	0.01	1156	584	1413
25	9	16	24	10	15	2935.5	1447.86	0.00	1173	587	1435
25	9	16	25	8	17	2705.9	1447.86	0.01	1156	582	1406
25	9	16	25	10	15	2996.3	1447.86	0.01	1171	586	1427
25	9	16	26	10	17	3059.6	1447.86	0.01	1170	584	1423
25	10	16	24	9	15	2629.4	1600.94	0.00	1172	587	1434
25	10	16	25	9	17	2690.2	1600.94	0.00	1171	586	1427
25	10	16	25	11	15	3011.9	1600.94	0.01	1187	589	1447
25	10	16	26	9	17	2753.4	1600.94	0.00	1171	584	1424
25	10	16	26	11	15	3075.2	1600.94	0.01	1186	588	1443
26	0	26	25	1	25	2783.5	823.84	0.41	1074	569	1298
26	0	26	26	1	25	2891.9	823.84	0.14	1075	566	1291
26	0	26	27	1	27	2905.8	823.84	0.45	1075	566	1291
26	1	26	25	0	25	2782.9	824.12	0.41	1072	569	1299
26	1	26	26	2	25	2896.5	824.12	0.14	1075	567	1293
26	1	26	27	0	27	2905.3	824.12	0.45	1075	566	1291
26	1	26	27	2	25	2990.6	824.12	0.01	1080	564	1291
26	2	24	25	1	25	2703.0	904.31	0.01	1081	566	1303
26	2	24	25	3	23	2803.5	904.31	0.08	1085	566	1298
26	2	24	26	1	25	2811.4	904.31	0.22	1079	564	1284
26	2	24	26	3	23	2874.3	904.31	0.27	1087	563	1292
26	2	24	27	3	25	2932.3	904.31	0.11	1086	562	1285
26	3	24	25	2	23	2755.0	927.81	0.09	1084	565	1296
26	3	24	26	2	25	2792.0	927.81	0.15	1083	566	1296
26	3	24	26	4	23	2901.1	927.81	0.17	1092	566	1308
26	3	24	27	2	25	2886.9	927.81	0.08	1085	563	1286
26	3	24	27	4	23	2968.1	927.81	0.08	1094	565	1303
26	4	22	25	3	23	2721.4	986.48	0.05	1092	568	1313
26	4	22	25	5	21	2851.6	986.48	0.04	1101	569	1330
26	4	22	26	3	23	2792.2	986.48	0.13	1095	566	1309
26	4	22	26	5	21	2915.0	986.48	0.13	1102	568	1324
26	4	22	27	5	23	2980.8	986.48	0.07	1103	566	1319
26	5	22	25	4	21	2707.9	1058.19	0.05	1100	565	1329
26	5	22	26	4	23	2770.7	1058.19	0.09	1101	568	1322
26	5	22	26	6	21	2932.2	1058.19	0.09	1113	570	1340
26	5	22	27	4	23	2837.7	1058.19	0.03	1104	566	1318
26	5	22	27	6	21	2997.9	1058.19	0.06	1113	568	1335
26	6	20	25	5	21	2690.9	1147.14	0.03	1113	571	1345
26	6	20	25	7	19	2885.3	1147.14	0.01	1126	574	1363
26	6	20	26	5	21	2754.3	1147.14	0.05	1113	570	1340
26	6	20	26	7	19	2948.5	1147.14	0.06	1125	572	1360
26	6	20	27	7	21	3014.2	1147.14	0.04	1125	571	1354
26	7	20	25	6	19	2674.7	1252.40	0.02	1126	574	1362
26	7	20	26	6	21	2738.0	1252.40	0.03	1125	572	1360
26	7	20	26	8	19	2964.6	1252.40	0.03	1141	575	1380
26	7	20	27	6	21	2803.7	1252.40	0.01	1125	571	1355
26	7	20	27	8	19	3030.3	1252.40	0.03	1139	573	1373
26	8	18	25	7	19	2658.6	1373.78	0.01	1140	577	1383

26	8	18	25	9	17	2917.3	1373.78	0.00	1156	580	1404
26	8	18	26	7	19	2721.9	1373.78	0.02	1141	575	1380
26	8	18	26	9	17	2980.6	1373.78	0.02	1155	579	1400
26	8	18	27	9	19	3046.2	1373.78	0.02	1153	577	1393
26	9	18	25	8	17	2642.7	1511.09	0.01	1155	580	1403
26	9	18	26	8	19	2705.9	1511.09	0.01	1155	579	1400
26	9	18	26	10	17	2996.3	1511.09	0.01	1170	582	1420
26	9	18	27	8	19	2771.6	1511.09	0.00	1154	577	1394
26	9	18	27	10	17	3062.0	1511.09	0.01	1168	580	1413
26	10	16	25	9	17	2626.9	1664.17	0.00	1170	584	1423
26	10	16	25	11	15	2948.7	1664.17	0.00	1186	588	1444
26	10	16	26	9	17	2690.2	1664.17	0.00	1170	582	1420
26	10	16	26	11	15	3011.9	1664.17	0.00	1185	586	1439
26	10	16	27	11	17	3077.6	1664.17	0.00	1184	584	1434
27	1	26	26	2	25	2783.1	937.49	0.16	1079	564	1285
27	1	26	27	0	27	2791.9	937.49	0.08	1079	563	1281
27	1	26	27	2	25	2877.2	937.49	0.19	1079	560	1271
27	1	26	28	2	27	2914.1	937.49	0.18	1080	560	1270
27	2	26	26	1	25	2774.0	941.73	0.16	1078	564	1283
27	2	26	27	1	27	2787.9	941.73	0.08	1078	564	1284
27	2	26	27	3	25	2894.9	941.73	0.14	1084	562	1284
27	2	26	28	1	27	2906.3	941.73	0.17	1079	560	1272
27	2	26	28	3	25	2973.7	941.73	0.03	1082	559	1272
27	3	24	26	2	25	2718.1	1002.52	0.02	1085	564	1290
27	3	24	26	4	23	2826.4	1002.52	0.04	1094	564	1300
27	3	24	27	2	25	2812.2	1002.52	0.17	1084	559	1273
27	3	24	27	4	23	2893.3	1002.52	0.14	1094	561	1290
27	3	24	28	4	25	2960.6	1002.52	0.06	1090	558	1279
27	4	24	26	3	23	2727.1	1051.55	0.04	1094	563	1303
27	4	24	27	3	25	2785.1	1051.55	0.09	1093	562	1295
27	4	24	27	5	23	2915.7	1051.55	0.10	1102	564	1312
27	4	24	28	3	25	2863.9	1051.55	0.03	1090	558	1279
27	4	24	28	5	23	2984.1	1051.55	0.06	1099	562	1300
27	5	22	26	4	23	2704.8	1124.07	0.03	1102	566	1318
27	5	22	26	6	21	2866.3	1124.07	0.02	1114	568	1336
27	5	22	27	4	23	2771.8	1124.07	0.07	1103	564	1310
27	5	22	27	6	21	2932.0	1124.07	0.07	1113	566	1329
27	5	22	28	6	23	3000.2	1124.07	0.04	1111	564	1319
27	6	22	26	5	21	2688.6	1212.87	0.03	1113	568	1335
27	6	22	27	5	23	2754.4	1212.87	0.04	1113	566	1329
27	6	22	27	7	21	2948.5	1212.87	0.04	1125	569	1347
27	6	22	28	5	23	2822.7	1212.87	0.01	1110	564	1318
27	6	22	28	7	21	3016.6	1212.87	0.03	1123	567	1338
27	7	20	26	6	21	2672.3	1318.10	0.02	1125	571	1354
27	7	20	26	8	19	2898.9	1318.10	0.01	1140	573	1374
27	7	20	27	6	21	2739.0	1318.10	0.02	1125	569	1347
27	7	20	27	8	19	2964.6	1318.10	0.02	1139	572	1366
27	7	20	28	8	21	3032.7	1318.10	0.02	1137	569	1357
27	8	20	26	7	19	2656.2	1439.46	0.01	1139	573	1373
27	8	20	27	7	21	2721.9	1439.46	0.01	1139	572	1366
27	8	20	27	9	19	2980.6	1439.46	0.01	1154	575	1386
27	8	20	28	7	21	2790.0	1439.46	0.00	1137	569	1357
27	8	20	28	9	19	3048.7	1439.46	0.01	1150	572	1377
27	9	18	26	8	19	2640.2	1576.77	0.01	1153	577	1393

27	9	13	26	10	17	2930.6	1576.77	0.00	1169	580	1414
27	9	12	27	8	19	2705.9	1576.77	0.01	1154	575	1386
27	9	13	27	10	17	2996.3	1576.77	0.01	1168	578	1406
27	9	13	28	10	19	3064.5	1576.77	0.01	1164	576	1396
27	10	13	26	9	17	2624.5	1729.86	0.00	1168	580	1413
27	10	12	27	9	19	2690.1	1729.86	0.00	1168	578	1406
27	10	13	27	11	17	3011.9	1729.86	0.00	1182	582	1426
27	10	13	28	9	19	2758.3	1729.86	0.00	1165	576	1396
27	10	13	28	11	17	3080.1	1729.86	0.00	1178	580	1415
28	0	28	27	1	27	2778.9	950.76	0.25	1077	564	1281
28	0	28	28	1	27	2897.2	950.76	0.08	1078	560	1269
28	0	28	29	1	29	2910.2	950.76	0.27	1078	560	1270
28	1	28	27	0	27	2778.5	950.94	0.25	1078	564	1281
28	1	28	28	2	27	2900.7	950.94	0.08	1079	560	1271
28	1	28	29	0	29	2909.9	950.94	0.27	1079	560	1270
28	1	28	29	2	27	3005.2	950.94	0.00	1075	555	1252
28	2	26	27	1	27	2688.6	1041.01	0.00	1080	560	1272
28	2	26	27	3	25	2795.6	1041.01	0.05	1083	558	1266
28	2	26	28	1	27	2807.0	1041.01	0.11	1075	555	1250
28	2	26	28	3	25	2874.4	1041.01	0.16	1076	552	1246
28	2	26	29	3	27	2933.9	1041.01	0.07	1073	552	1238
28	3	26	27	2	25	2753.3	1061.36	0.05	1082	558	1266
28	3	26	28	2	27	2790.3	1061.36	0.08	1083	558	1265
28	3	26	28	4	25	2901.8	1061.36	0.10	1088	557	1272
28	3	26	29	2	27	2894.8	1061.36	0.05	1073	552	1242
28	3	26	29	4	25	2974.4	1061.36	0.04	1082	554	1259
28	4	24	27	3	25	2715.3	1121.30	0.03	1092	560	1285
28	4	24	27	5	23	2846.0	1121.30	0.02	1100	562	1301
28	4	24	28	3	25	2794.1	1121.30	0.08	1086	555	1266
28	4	24	28	5	23	2914.3	1121.30	0.07	1096	559	1288
28	4	24	29	5	25	2985.0	1121.30	0.04	1090	556	1273
28	5	24	27	4	23	2703.6	1192.28	0.03	1101	562	1299
28	5	24	28	4	25	2770.8	1192.28	0.05	1097	558	1287
28	5	24	28	6	23	2932.0	1192.28	0.05	1108	561	1307
28	5	24	29	4	25	2843.5	1192.28	0.02	1092	555	1273
28	5	24	29	6	23	3002.7	1192.28	0.03	1102	558	1293
28	6	22	27	5	23	2686.2	1281.06	0.02	1111	564	1319
28	6	22	27	7	21	2880.3	1281.06	0.01	1124	567	1339
28	6	22	28	5	23	2754.5	1281.06	0.03	1108	561	1307
28	6	22	28	7	21	2948.4	1281.06	0.03	1120	564	1327
28	6	22	29	7	23	3019.0	1281.06	0.02	1114	560	1312
28	7	22	27	6	21	2669.9	1386.24	0.01	1123	567	1338
28	7	22	28	6	23	2738.1	1386.24	0.02	1120	564	1327
28	7	22	28	8	21	2964.6	1386.24	0.02	1133	567	1346
28	7	22	29	6	23	2808.7	1386.24	0.01	1115	561	1312
28	7	22	29	8	21	3035.2	1386.24	0.02	1127	564	1330
28	8	20	27	7	21	2653.7	1507.59	0.01	1137	569	1357
28	8	20	27	9	19	2912.4	1507.59	0.00	1150	572	1377
28	8	20	28	7	21	2721.9	1507.59	0.01	1133	567	1346
28	8	20	28	9	19	2980.6	1507.59	0.01	1146	570	1364
28	8	20	29	9	21	3051.1	1507.59	0.01	1141	567	1350
28	9	20	27	8	19	2637.8	1644.90	0.00	1150	572	1377
28	9	20	28	8	21	2705.9	1644.90	0.00	1146	570	1364
28	9	20	28	10	19	2996.3	1644.90	0.01	1160	574	1385

28	9	20	29	8	21	2776.5	1644.90	0.00	1141	567	1350
28	9	20	29	10	19	3067.0	1644.90	0.01	1155	571	1370
28	10	18	27	9	19	2622.0	1798.01	0.00	1164	576	1396
28	10	18	27	11	17	2943.8	1798.01	0.00	1179	580	1416
28	10	18	28	9	19	2690.1	1798.01	0.00	1160	574	1385
28	10	18	28	11	17	3012.0	1798.01	0.00	1174	577	1405
28	10	18	29	11	19	3082.6	1798.01	0.00	1169	575	1390
29	1	28	28	2	27	2777.4	1074.24	0.09	1076	555	1251
29	1	28	29	0	25	2786.6	1074.24	0.04	1075	555	1249
29	1	28	29	2	27	2881.9	1074.24	0.09	1065	549	1223
29	1	28	30	2	29	2917.6	1074.24	0.11	1066	550	1225
29	2	28	28	1	27	2770.7	1077.33	0.09	1075	555	1250
29	2	28	29	1	29	2783.7	1077.33	0.04	1076	556	1251
29	2	28	29	3	27	2897.6	1077.33	0.08	1074	552	1240
29	2	28	30	1	29	2911.9	1077.33	0.10	1067	550	1225
29	2	28	30	3	27	2985.1	1077.33	0.01	1070	547	1220
29	3	26	28	2	27	2707.2	1144.40	0.01	1077	553	1247
29	3	26	28	4	25	2818.7	1144.40	0.02	1081	552	1252
29	3	26	29	2	27	2811.8	1144.40	0.10	1064	546	1213
29	3	26	29	4	25	2891.3	1144.40	0.08	1074	549	1232
29	3	26	30	4	27	2962.7	1144.40	0.03	1069	546	1218
29	4	26	28	3	25	2724.8	1190.67	0.02	1080	552	1250
29	4	26	29	3	27	2784.3	1190.67	0.05	1077	552	1244
29	4	26	29	5	25	2915.6	1190.67	0.05	1085	553	1258
29	4	26	30	3	27	2871.7	1190.67	0.02	1071	546	1221
29	4	26	30	5	25	2988.9	1190.67	0.03	1081	550	1244
29	5	24	28	4	25	2700.0	1263.13	0.02	1090	555	1273
29	5	24	28	6	23	2861.2	1263.13	0.01	1102	558	1293
29	5	24	29	4	25	2772.6	1263.13	0.04	1085	552	1256
29	5	24	29	6	23	2931.8	1263.13	0.04	1096	555	1277
29	5	24	30	6	25	3004.9	1263.13	0.02	1092	552	1261
29	6	24	28	5	23	2683.9	1351.70	0.01	1102	558	1293
29	6	24	29	5	25	2754.5	1351.70	0.02	1096	555	1278
29	6	24	29	7	23	2948.4	1351.70	0.02	1108	557	1297
29	6	24	30	5	25	2827.9	1351.70	0.01	1092	552	1263
29	6	24	30	7	23	3021.4	1351.70	0.02	1103	554	1280
29	7	22	28	6	23	2667.5	1456.84	0.01	1114	560	1312
29	7	22	28	8	21	2894.0	1456.84	0.00	1128	564	1331
29	7	22	29	6	23	2738.1	1456.84	0.01	1108	557	1297
29	7	22	29	8	21	2964.6	1456.84	0.01	1121	560	1317
29	7	22	30	8	23	3037.6	1456.84	0.01	1117	557	1301
29	8	22	28	7	21	2651.3	1578.17	0.01	1127	564	1330
29	8	22	29	7	23	2721.9	1578.17	0.01	1121	560	1317
29	8	22	29	9	21	2980.6	1578.17	0.01	1135	564	1336
29	8	22	30	7	23	2795.0	1578.17	0.00	1117	557	1303
29	8	22	30	9	21	3053.6	1578.17	0.01	1130	560	1322
29	9	20	28	8	21	2635.3	1715.49	0.00	1141	567	1350
29	9	20	28	10	19	2925.8	1715.49	0.00	1155	571	1371
29	9	20	29	8	21	2705.9	1715.49	0.00	1135	564	1336
29	9	20	29	10	19	2996.4	1715.49	0.00	1149	567	1356
29	9	20	30	10	21	3069.4	1715.49	0.00	1143	564	1340
29	10	20	28	9	19	2619.5	1868.61	0.00	1155	571	1370
29	10	20	29	9	21	2690.1	1868.61	0.00	1149	567	1356
29	10	20	29	11	19	3012.0	1868.61	0.00	1163	571	1376

29	10	20	30	9	21	2763.2	1868.61	0.00	1143	564	1341
29	10	20	30	11	19	3085.1	1868.61	0.00	1157	568	1361
30	0	30	29	1	29	2774.3	1086.69	0.14	1075	556	1250
30	0	30	30	1	29	2902.5	1086.69	0.04	1064	550	1223
30	0	30	31	1	31	2914.7	1086.69	0.15	1064	550	1226
30	1	30	29	0	29	2774.0	1086.80	0.14	1074	556	1250
30	1	30	30	2	29	2905.0	1086.80	0.04	1066	551	1227
30	1	30	31	0	31	2914.5	1086.80	0.15	1064	550	1226
30	1	30	31	2	29	3020.2	1086.80	0.00	1064	545	1207
30	2	28	29	1	29	2673.8	1187.20	0.00	1070	550	1230
30	2	28	29	3	27	2787.8	1187.20	0.03	1065	546	1211
30	2	28	30	1	29	2802.0	1187.20	0.05	1057	544	1193
30	2	28	30	3	27	2875.2	1187.20	0.08	1053	541	1180
30	2	28	31	3	29	2935.6	1187.20	0.04	1050	541	1175
30	3	28	29	2	27	2751.7	1204.45	0.03	1062	546	1207
30	3	28	30	2	29	2787.4	1204.45	0.04	1063	547	1208
30	3	28	30	4	27	2902.7	1204.45	0.05	1067	546	1211
30	3	28	31	2	29	2902.6	1204.45	0.03	1054	541	1182
30	3	29	31	4	27	2981.3	1204.45	0.02	1062	543	1198
30	4	26	29	3	27	2708.7	1266.22	0.01	1073	548	1227
30	4	26	29	5	25	2840.0	1266.22	0.01	1081	549	1242
30	4	26	30	3	27	2796.2	1266.22	0.04	1063	543	1198
30	4	26	30	5	25	2913.4	1266.22	0.04	1075	546	1225
30	4	26	31	5	27	2988.9	1266.22	0.02	1070	544	1211
30	5	26	29	4	25	2699.5	1336.20	0.01	1081	549	1241
30	5	26	30	4	27	2770.9	1336.20	0.03	1076	547	1227
30	5	26	30	6	25	2931.8	1336.20	0.03	1088	549	1245
30	5	26	31	4	27	2849.5	1336.20	0.01	1070	543	1211
30	5	26	31	6	25	3007.4	1336.20	0.02	1083	546	1232
30	6	24	29	5	25	2681.4	1424.80	0.01	1092	552	1261
30	6	24	29	7	23	2875.3	1424.80	0.00	1104	554	1281
30	6	24	30	5	25	2754.8	1424.80	0.02	1088	549	1245
30	6	24	30	7	23	2948.3	1424.80	0.02	1100	551	1263
30	6	24	31	7	25	3023.8	1424.80	0.01	1094	549	1250
30	7	24	29	6	23	2665.1	1529.89	0.01	1103	554	1280
30	7	24	30	6	25	2738.1	1529.89	0.01	1100	551	1263
30	7	24	30	8	23	2964.6	1529.89	0.01	1112	554	1283
30	7	24	31	6	25	2813.7	1529.89	0.00	1095	549	1251
30	7	24	31	8	23	3040.1	1529.89	0.01	1106	552	1270
30	8	22	29	7	23	2648.9	1651.21	0.00	1117	557	1301
30	8	22	29	9	21	2907.5	1651.21	0.00	1131	560	1320
30	8	22	30	7	23	2721.9	1651.21	0.01	1112	554	1283
30	8	22	30	9	21	2980.6	1651.21	0.01	1125	557	1303
30	8	22	31	9	23	3056.1	1651.21	0.00	1119	554	1291
30	9	22	29	8	21	2632.9	1788.53	0.00	1130	560	1322
30	9	22	30	8	23	2705.9	1788.53	0.00	1125	557	1303
30	9	22	30	10	21	2996.4	1788.53	0.00	1138	561	1323
30	9	22	31	8	23	2781.4	1788.53	0.00	1120	555	1290
30	9	22	31	10	21	3071.9	1788.53	0.00	1133	558	1310
30	10	20	29	9	21	2617.0	1941.69	0.00	1143	564	1340
30	10	20	29	11	19	2938.9	1941.69	0.00	1158	568	1361
30	10	20	30	9	21	2690.1	1941.69	0.00	1138	561	1323
30	10	20	30	11	19	3012.0	1941.69	0.00	1152	565	1344
30	10	20	31	11	21	3087.6	1941.69	0.00	1146	562	1332

VIII. APPENDIX D

LISTING OF LINEWIDTHS FOR TYPE C BAND

The format of this listing is the same as that used for the tabulation in the Appendix B. The line position and the relative line intensity values refer to the ν_6 fundamental band of H_2CO . All other spectral parameters listed can be applied to any type C vibrational-rotational band of formaldehyde.

Listing of Linewidth Parameters for Type C Band of H₂CO

Lower State			Upper State			Approximate Line Position in the ν_6 Band (cm ⁻¹)	Rotational Energy of the Lower State (cm ⁻¹)	Relative Line Intensity (ν_6 Band) at 300°K	γ° (in 10 ⁻⁴ cm ⁻¹ atm ⁻¹) of H ₂ CO Lines Broadened by			
J	K _a	K _c	J	K _a	K _c				H ₂ CO	N ₂	O ₂	Air
										300°K		200°K
0	0	0	1	1	0	1177.9	0.0	1.01	8038	1454	652	1809
1	1	1	1	0	1	1159.1	10.54	1.41	7459	1467	656	1830
1	1	1	2	2	1	1196.7	10.54	1.46	8018	1460	656	1806
2	0	2	2	1	2	1175.2	7.29	2.45	6347	1501	668	1854
2	0	2	3	1	2	1183.2	7.29	1.94	6168	1501	674	1826
2	1	1	1	0	1	1153.9	15.72	1.37	6896	1487	663	1845
2	1	1	2	2	1	1191.5	15.72	0.79	7462	1478	663	1821
2	1	1	3	2	1	1198.8	15.72	1.63	6953	1489	669	1818
2	2	0	1	1	0	1137.9	40.04	1.21	7987	1462	656	1808
2	2	0	3	3	0	1215.4	40.04	2.15	8387	1455	657	1782
3	1	3	3	0	3	1159.5	22.28	3.19	5957	1504	679	1812
3	1	3	4	2	3	1202.0	22.28	1.73	6660	1482	678	1768
3	2	2	2	1	2	1135.1	47.33	1.29	6982	1488	668	1820
3	2	2	3	1	2	1143.1	47.33	1.14	6778	1488	675	1791
3	2	2	4	3	2	1217.8	47.33	2.19	7642	1467	670	1761
3	3	1	2	2	1	1119.0	88.24	1.57	8387	1455	657	1782
3	3	1	3	2	1	1126.3	88.24	0.54	7971	1466	664	1780
3	3	1	4	4	1	1234.1	88.24	2.42	8744	1443	657	1757
4	0	4	4	1	4	1174.6	24.26	4.19	6143	1470	684	1721
4	0	4	5	1	4	1188.8	24.26	2.63	6556	1435	682	1653
4	1	3	3	0	3	1148.5	33.28	2.06	6140	1482	682	1750
4	1	3	4	2	3	1191.0	33.28	1.79	6774	1460	681	1706
4	1	3	5	2	3	1203.2	33.28	2.00	6922	1433	681	1659
4	2	2	3	1	2	1133.4	57.08	1.46	6682	1479	679	1755
4	2	2	4	3	2	1208.1	57.08	1.22	7569	1457	674	1725
4	2	2	5	3	2	1220.2	57.08	2.25	7552	1437	675	1686
4	3	1	3	2	1	1116.6	97.96	1.57	7643	1467	670	1761
4	3	1	4	4	1	1224.4	97.96	0.58	8501	1445	663	1739
4	3	1	5	4	1	1236.6	97.96	2.39	8334	1435	667	1709
4	4	0	3	3	0	1100.3	155.16	1.56	8744	1443	657	1757

4	4	0	5	5	0	1252.8	155.16	2.29	9020	1429	655	1738
5	1	5	5	0	5	1160.2	43.41	4.72	6633	1413	682	1618
5	1	5	6	2	5	1207.5	43.41	1.93	7291	1379	676	1584
5	2	4	4	1	4	1129.7	69.18	1.44	6848	1439	681	1679
5	2	4	5	1	4	1143.8	69.18	1.85	7138	1403	678	1609
5	2	4	6	3	4	1222.7	69.18	2.29	7806	1382	673	1596
5	3	3	4	2	3	1114.1	110.11	1.59	7549	1437	675	1686
5	3	3	5	2	3	1126.4	110.11	1.22	7663	1410	676	1639
5	3	3	6	4	3	1239.0	110.11	2.36	8361	1395	668	1630
5	4	2	4	3	2	1097.9	167.31	1.52	8334	1435	667	1709
5	4	2	5	3	2	1110.0	167.31	0.69	8324	1414	669	1670
5	4	2	6	5	2	1255.2	167.31	2.21	8886	1405	662	1675
5	5	1	4	4	1	1081.6	240.76	1.31	9020	1429	655	1738
5	5	1	5	4	1	1093.8	240.76	0.27	8929	1421	660	1710
5	5	1	6	6	1	1271.4	240.76	1.89	9226	1417	652	1729
6	0	6	6	1	6	1173.8	50.86	5.59	7223	1348	674	1524
6	0	6	7	1	6	1194.7	50.86	2.96	7755	1302	663	1469
6	1	5	5	0	5	1142.7	60.86	2.42	7152	1371	675	1555
6	1	5	6	2	5	1190.1	60.86	2.45	7636	1338	669	1521
6	1	5	7	2	5	1207.4	60.86	2.33	7925	1302	662	1474
6	2	4	5	1	4	1129.1	83.91	1.70	7401	1373	674	1562
6	2	4	6	3	4	1208.0	83.91	1.88	7994	1354	669	1549
6	2	4	7	3	4	1225.0	83.91	2.31	8203	1323	663	1511
6	3	3	5	2	3	1111.8	124.69	1.59	7812	1382	673	1596
6	3	3	6	4	3	1224.4	124.69	1.31	8462	1366	666	1587
6	3	3	7	4	3	1241.4	124.69	2.32	8599	1338	662	1553
6	4	2	5	3	2	1095.4	181.89	1.48	8361	1395	668	1630
6	4	2	6	5	2	1240.7	181.89	0.75	8920	1382	661	1635
6	4	2	7	5	2	1257.7	181.89	2.13	8993	1357	659	1599
6	5	1	5	4	1	1079.2	255.33	1.24	8886	1405	662	1675
6	5	1	6	6	1	1256.8	255.33	0.29	9255	1401	655	1694
6	5	1	7	6	1	1273.8	255.33	1.79	9304	1381	655	1657
6	6	0	5	5	0	1063.0	344.96	0.95	9226	1417	652	1729
6	6	0	7	7	0	1289.9	344.96	1.37	9377	1409	650	1726
7	1	7	7	0	7	1161.0	73.90	5.88	7774	1282	660	1449
7	1	7	8	2	7	1213.4	73.90	1.97	8281	1260	652	1434
7	2	6	6	1	6	1124.0	100.73	1.49	7808	1319	666	1502
7	2	6	7	1	6	1144.9	100.73	2.32	8121	1272	656	1443
7	2	6	8	3	6	1227.6	100.73	2.29	8571	1263	650	1449
7	3	5	6	2	5	1109.2	141.71	1.58	8192	1323	663	1513
7	3	5	7	2	5	1126.5	141.71	1.58	8378	1287	657	1469
7	3	5	8	4	5	1243.8	141.71	2.26	8882	1280	650	1481
7	4	4	6	3	4	1093.0	198.89	1.43	8599	1338	662	1553
7	4	4	7	3	4	1110.0	198.89	1.05	8722	1307	656	1511
7	4	4	8	5	4	1260.1	198.89	2.04	9193	1304	650	1529
7	5	3	6	4	3	1076.8	272.33	1.18	8993	1357	659	1599
7	5	3	7	4	3	1093.8	272.33	0.60	9076	1329	655	1562
7	5	3	8	6	3	1276.2	272.33	1.69	9455	1332	650	1588
7	6	2	6	5	2	1060.6	361.95	0.89	9304	1381	655	1657
7	6	2	7	5	2	1077.6	361.95	0.28	9368	1356	653	1621
7	6	2	8	7	2	1292.3	361.95	1.28	9605	1365	649	1652
7	7	1	6	6	1	1044.5	467.66	0.61	9377	1409	650	1726
7	7	1	7	6	1	1061.5	467.66	0.09	9500	1389	651	1689
7	7	1	8	8	1	1308.3	467.66	0.89	9480	1404	648	1726

8	0	8	8	1	8	1172.9	86.97	6.53	8219	1224	646	1389
8	0	8	9	1	8	1201.2	86.97	2.92	8607	1186	636	1357
8	1	7	7	0	7	1136.5	98.42	2.44	8256	1242	648	1406
8	1	7	8	2	7	1188.9	98.42	2.84	8503	1212	641	1386
8	1	7	9	2	7	1211.5	98.42	2.53	8710	1181	634	1362
8	2	6	7	1	6	1125.0	120.62	1.86	8383	1239	648	1412
8	2	6	8	3	6	1207.8	120.62	2.17	8713	1228	642	1412
8	2	6	9	3	6	1229.7	120.62	2.26	8878	1203	635	1387
8	3	5	7	2	5	1107.1	161.17	1.55	8584	1260	650	1442
8	3	5	8	4	5	1224.4	161.17	1.67	8976	1252	643	1453
8	3	5	9	4	5	1246.2	161.17	2.18	9120	1226	637	1426
8	4	4	7	3	4	1090.6	218.33	1.37	8884	1280	650	1481
8	4	4	8	5	4	1240.6	218.33	1.12	9267	1277	644	1499
8	4	4	9	5	4	1262.5	218.33	1.94	9382	1252	639	1473
8	5	3	7	4	3	1074.3	291.76	1.11	9193	1304	650	1529
8	5	3	8	6	3	1256.8	291.76	0.65	9518	1306	646	1555
8	5	3	9	6	3	1278.7	291.76	1.58	9612	1283	641	1526
8	6	2	7	5	2	1058.2	381.37	0.83	9455	1332	650	1588
8	6	2	8	7	2	1272.9	381.37	0.31	9683	1341	646	1620
8	6	2	9	7	2	1294.7	381.37	1.19	9776	1317	643	1588
8	7	1	7	6	1	1042.1	487.07	0.56	9605	1365	649	1652
8	7	1	8	8	1	1288.9	487.07	0.10	9666	1381	647	1690
8	7	1	9	8	1	1310.7	487.07	0.82	9810	1357	644	1655
8	8	0	7	7	0	1026.1	608.75	0.35	9480	1404	648	1726
8	8	0	9	9	0	1326.6	608.75	0.52	9542	1402	646	1727
9	1	9	9	0	9	1162.0	113.73	6.57	8518	1169	632	1345
9	1	9	10	2	9	1219.7	113.73	1.87	8863	1156	624	1339
9	2	8	8	1	8	1117.9	141.95	1.40	8647	1203	637	1377
9	2	8	9	1	8	1146.2	141.95	2.55	8739	1165	626	1341
9	2	8	10	3	8	1232.6	141.95	2.17	9030	1162	622	1351
9	3	7	8	2	7	1104.3	183.06	1.49	8864	1207	636	1391
9	3	7	9	2	7	1126.9	183.06	1.70	8933	1176	628	1368
9	3	7	10	4	7	1248.7	183.06	2.07	9257	1181	623	1384
9	4	6	8	3	6	1088.2	240.21	1.30	9121	1226	637	1426
9	4	6	9	3	6	1110.1	240.21	1.20	9154	1201	629	1401
9	4	6	10	5	6	1264.9	240.21	1.82	9497	1204	626	1425
9	5	5	8	4	5	1071.9	313.62	1.04	9381	1252	639	1473
9	5	5	9	4	5	1093.8	313.62	0.75	9410	1226	632	1445
9	5	5	10	6	5	1281.1	313.62	1.47	9712	1234	630	1476
9	6	4	8	5	4	1055.8	403.22	0.76	9612	1283	641	1526
9	6	4	9	5	4	1077.6	403.22	0.41	9640	1257	635	1500
9	6	4	10	7	4	1297.2	403.22	1.10	9885	1270	633	1534
9	7	3	8	6	3	1039.7	508.91	0.52	9776	1317	643	1588
9	7	3	9	6	3	1061.5	508.91	0.20	9816	1294	638	1558
9	7	3	10	8	3	1313.1	508.91	0.75	9979	1311	637	1595
9	8	2	8	7	2	1023.7	630.58	0.32	9810	1357	644	1655
9	8	2	9	7	2	1045.5	630.58	0.08	9893	1333	641	1625
9	8	2	10	9	2	1329.0	630.58	0.47	9934	1354	641	1660
9	9	1	8	8	1	1007.8	768.11	0.18	9542	1402	646	1727
9	9	1	9	8	1	1029.7	768.11	0.02	9772	1378	644	1693
9	9	1	10	10	1	1344.7	768.11	0.27	9569	1402	645	1730
10	0	10	10	1	10	1171.9	132.48	6.92	8662	1128	617	1308
10	0	10	11	1	10	1208.1	132.48	2.59	8825	1104	607	1296
10	1	9	9	0	9	1129.9	145.91	2.18	8797	1139	622	1319

10	1	9	10	2	9	1187.5	145.91	2.95	8812	1122	613	1310
10	1	9	11	2	9	1215.7	145.91	2.56	8858	1104	606	1300
10	2	8	9	1	8	1120.8	167.31	1.90	8866	1143	619	1322
10	2	8	10	3	8	1207.3	167.31	2.19	9008	1137	614	1332
10	2	8	11	3	8	1234.1	167.31	2.09	9037	1121	609	1322
10	3	7	9	2	7	1102.5	207.42	1.43	9036	1156	622	1349
10	3	7	10	4	7	1224.3	207.42	1.75	9219	1157	616	1366
10	3	7	11	4	7	1251.1	207.42	1.95	9259	1140	612	1356
10	4	6	9	3	6	1085.8	264.52	1.22	9256	1181	623	1384
10	4	6	10	5	6	1240.6	264.52	1.25	9464	1183	620	1408
10	4	6	11	5	6	1267.3	264.52	1.69	9497	1166	615	1394
10	5	5	9	4	5	1069.5	337.91	0.96	9496	1204	626	1425
10	5	5	10	6	5	1256.8	337.91	0.80	9688	1212	624	1455
10	5	5	11	6	5	1283.5	337.91	1.36	9718	1196	619	1441
10	6	4	9	5	4	1053.3	427.50	0.70	9712	1234	630	1476
10	6	4	10	7	4	1272.9	427.50	0.45	9873	1247	628	1511
10	6	4	11	7	4	1299.6	427.50	1.00	9903	1229	623	1493
10	7	3	9	6	3	1037.3	533.17	0.47	9885	1270	633	1534
10	7	3	10	8	3	1288.9	533.17	0.22	9996	1288	633	1570
10	7	3	11	8	3	1315.5	533.17	0.68	10037	1267	628	1550
10	8	2	9	7	2	1021.3	654.83	0.29	9979	1311	637	1595
10	8	2	10	9	2	1304.7	654.83	0.09	10012	1333	637	1634
10	8	2	11	9	2	1331.4	654.83	0.43	10085	1311	633	1608
10	9	1	9	8	1	1005.4	792.35	0.16	9934	1354	641	1660
10	9	1	10	10	1	1320.5	792.35	0.02	9824	1378	642	1698
10	9	1	11	10	1	1347.1	792.35	0.25	9990	1356	638	1670
10	10	0	9	9	0	989.7	945.60	0.09	9569	1402	645	1730
10	10	0	11	11	0	1362.7	945.60	0.13	9573	1403	644	1733
11	1	11	11	0	11	1163.1	162.85	6.72	8658	1097	605	1287
11	1	11	12	2	11	1226.2	162.85	1.64	8833	1092	600	1298
11	2	10	10	1	10	1111.5	192.82	1.23	8923	1119	610	1310
11	2	10	11	1	10	1147.8	192.82	2.57	8727	1094	600	1295
11	2	10	12	3	10	1237.7	192.82	1.94	8911	1100	599	1313
11	3	9	10	2	9	1099.2	234.15	1.33	9043	1124	610	1325
11	3	9	11	2	9	1127.5	234.15	1.62	8929	1105	603	1315
11	3	9	12	4	9	1253.5	234.15	1.81	9131	1115	601	1342
11	4	8	10	3	8	1083.3	291.26	1.12	9262	1141	612	1355
11	4	8	11	3	8	1110.2	291.26	1.18	9143	1125	606	1345
11	4	8	12	5	8	1269.7	291.26	1.56	9371	1138	605	1379
11	5	7	10	4	7	1067.1	364.64	0.88	9498	1166	615	1394
11	5	7	11	4	7	1093.8	364.64	0.77	9392	1149	609	1385
11	5	7	12	6	7	1285.9	364.64	1.24	9603	1166	609	1420
11	6	6	10	5	6	1050.9	454.21	0.63	9718	1196	619	1441
11	6	6	11	5	6	1077.6	454.21	0.45	9624	1178	613	1429
11	6	6	12	7	6	1302.0	454.21	0.91	9809	1198	613	1468
11	7	5	10	6	5	1034.8	559.87	0.42	9903	1229	623	1493
11	7	5	11	6	5	1061.5	559.87	0.24	9828	1213	618	1478
11	7	5	12	8	5	1318.0	559.87	0.61	9977	1235	618	1518
11	8	4	10	7	4	1018.9	681.51	0.26	10037	1267	628	1550
11	8	4	11	7	4	1045.6	681.51	0.11	9987	1249	623	1532
11	8	4	12	9	4	1333.8	681.51	0.38	10088	1273	624	1571
11	9	3	10	8	3	1003.0	819.02	0.15	10085	1311	633	1608
11	9	3	11	8	3	1029.7	819.02	0.04	10076	1290	628	1587
11	9	3	12	10	3	1349.5	819.02	0.22	10112	1316	630	1625

11	10	2	10	9	2	987.3	972.25	0.08	9990	1356	638	1670
11	10	2	11	9	2	1014.0	972.25	0.01	10057	1336	634	1647
11	10	2	12	11	2	1365.1	972.25	0.12	9994	1360	637	1681
12	0	12	12	1	12	1170.9	187.25	6.76	8511	1078	595	1283
12	0	12	13	1	12	1215.6	187.25	2.09	8459	1068	590	1295
12	1	11	11	0	11	1122.6	203.29	1.75	8708	1084	597	1291
12	1	11	12	2	11	1185.8	203.29	2.84	8506	1074	593	1299
12	1	11	13	2	11	1220.2	203.29	2.40	8381	1070	588	1306
12	2	10	11	1	10	1116.5	224.06	1.80	8686	1084	595	1296
12	2	10	12	3	10	1206.5	224.06	1.99	8704	1087	594	1315
12	2	10	13	3	10	1238.3	224.06	1.84	8604	1081	590	1321
12	3	9	11	2	9	1098.2	263.46	1.25	8888	1098	598	1315
12	3	9	12	4	9	1224.2	263.46	1.64	8944	1106	596	1341
12	3	9	13	4	9	1255.8	263.46	1.66	8870	1100	593	1344
12	4	8	11	3	8	1081.0	320.44	1.03	9124	1115	601	1342
12	4	8	12	5	8	1240.6	320.44	1.21	9199	1129	600	1374
12	4	8	13	5	8	1272.2	320.44	1.41	9126	1122	597	1375
12	5	7	11	4	7	1064.7	393.80	0.79	9372	1138	605	1379
12	5	7	12	6	7	1256.8	393.80	0.80	9443	1155	604	1415
12	5	7	13	6	7	1288.3	393.80	1.11	9371	1147	601	1414
12	6	6	11	5	6	1048.5	483.35	0.57	9603	1166	609	1420
12	6	6	12	7	6	1272.9	483.35	0.48	9667	1186	608	1460
12	6	6	13	7	6	1304.4	483.35	0.81	9599	1176	605	1455
12	7	5	11	6	5	1032.4	588.99	0.37	9809	1198	613	1468
12	7	5	12	8	5	1288.8	588.99	0.26	9857	1221	614	1508
12	7	5	13	8	5	1320.4	588.99	0.54	9797	1209	610	1501
12	8	4	11	7	4	1016.5	710.62	0.23	9977	1235	618	1518
12	8	4	12	9	4	1304.7	710.62	0.12	10003	1259	619	1559
12	8	4	13	9	4	1336.2	710.62	0.34	9956	1246	616	1547
12	9	3	11	8	3	1000.6	848.11	0.13	10088	1273	624	1571
12	9	3	12	10	3	1320.4	848.11	0.05	10077	1299	626	1609
12	9	3	13	10	3	1351.9	848.11	0.19	10058	1284	622	1596
12	10	2	11	9	2	984.9	1001.33	0.07	10112	1310	630	1625
12	10	2	12	11	2	1336.0	1001.33	0.02	10213	1342	632	1662
12	10	2	13	11	2	1367.5	1001.33	0.10	10092	1324	629	1643
13	1	13	13	0	13	1164.0	221.24	6.35	8238	1064	588	1291
13	1	13	14	2	13	1233.1	221.24	1.35	8274	1066	584	1307
13	2	12	12	1	12	1104.8	253.29	1.00	8612	1077	592	1302
13	2	12	13	1	12	1149.6	253.29	2.42	8165	1066	585	1308
13	2	12	14	3	12	1243.0	253.29	1.64	8297	1075	585	1328
13	3	11	12	2	11	1094.1	295.00	1.11	8656	1082	592	1319
13	3	11	13	2	11	1128.4	295.00	1.43	8363	1078	586	1326
13	3	11	14	4	11	1258.3	295.00	1.50	8514	1091	587	1350
13	4	10	12	3	10	1078.5	352.06	0.53	8873	1100	593	1343
13	4	10	13	3	10	1110.3	352.06	1.05	8631	1093	590	1348
13	4	10	14	5	10	1274.6	352.06	1.27	8776	1110	590	1380
13	5	9	12	4	9	1062.3	425.39	0.71	9126	1122	597	1375
13	5	9	13	4	9	1093.9	425.39	0.71	8898	1115	593	1377
13	5	9	14	6	9	1290.7	425.39	0.99	9038	1134	594	1413
13	6	8	12	5	8	1046.1	514.92	0.50	9371	1147	601	1414
13	6	8	13	5	8	1077.7	514.92	0.43	9155	1141	597	1413
13	6	8	14	7	8	1306.8	514.92	0.72	9285	1161	599	1451
13	7	7	12	6	7	1030.0	620.55	0.33	9599	1176	605	1455
13	7	7	13	6	7	1061.6	620.55	0.24	9399	1168	602	1453

13	7	7	14	8	7	1322.8	620.55	0.48	9511	1191	605	1490
13	8	6	12	7	6	1014.0	742.16	0.20	9797	1209	610	1501
13	8	6	13	7	6	1045.6	742.16	0.12	9618	1199	607	1496
13	8	6	14	9	6	1338.6	742.16	0.30	9711	1223	610	1532
13	9	5	12	8	5	998.2	879.64	0.11	9956	1246	616	1547
13	9	5	13	8	5	1029.7	879.64	0.05	9805	1234	613	1540
13	9	5	14	10	5	1354.3	879.64	0.17	9867	1260	615	1574
13	10	4	12	9	4	982.5	1032.84	0.06	10058	1284	622	1596
13	10	4	13	9	4	1014.0	1032.84	0.02	9943	1272	619	1586
13	10	4	14	11	4	1369.9	1032.84	0.09	9969	1296	622	1616
14	0	14	14	1	14	1169.9	251.16	6.12	7863	1058	581	1305
14	0	14	15	1	14	1223.7	251.16	1.56	7661	1055	578	1313
14	1	13	13	0	13	1114.8	270.46	1.29	8102	1063	583	1306
14	1	13	14	2	13	1183.9	270.46	2.56	7736	1061	580	1316
14	1	13	15	2	13	1225.0	270.46	2.07	7469	1056	578	1324
14	2	12	13	1	12	1111.9	290.96	1.57	7963	1064	582	1317
14	2	12	14	3	12	1205.3	290.96	1.67	7931	1071	581	1335
14	2	12	15	3	12	1242.2	290.96	1.53	7725	1068	579	1336
14	3	11	13	2	11	1094.1	329.34	1.05	8208	1075	583	1329
14	3	11	14	4	11	1224.0	329.34	1.40	8228	1085	584	1353
14	3	11	15	4	11	1260.5	329.34	1.34	8066	1081	582	1354
14	4	10	13	3	10	1076.3	386.13	0.83	8507	1090	587	1350
14	4	10	14	5	10	1240.5	386.13	1.05	8501	1106	588	1382
14	4	10	15	5	10	1277.0	386.13	1.12	8347	1101	585	1382
14	5	9	13	4	9	1059.9	459.41	0.63	8777	1110	590	1380
14	5	9	14	6	9	1256.7	459.41	0.72	8772	1129	591	1414
14	5	9	15	6	9	1293.2	459.41	0.87	8616	1124	589	1413
14	6	8	13	5	8	1043.7	548.92	0.44	9038	1134	594	1413
14	6	8	14	7	8	1272.8	548.92	0.44	9036	1155	596	1449
14	6	8	15	7	8	1309.2	548.92	0.63	8883	1149	593	1445
14	7	7	13	6	7	1027.6	654.53	0.29	9285	1161	599	1451
14	7	7	14	8	7	1288.8	654.53	0.25	9281	1185	602	1487
14	7	7	15	8	7	1325.2	654.53	0.42	9134	1176	598	1480
14	8	6	13	7	6	1011.6	776.13	0.17	9511	1191	605	1490
14	8	6	14	9	6	1304.7	776.13	0.13	9502	1215	608	1526
14	8	6	15	9	6	1341.1	776.13	0.26	9364	1207	605	1518
14	9	5	13	8	5	995.8	913.59	0.10	9711	1223	610	1532
14	9	5	14	10	5	1320.4	913.59	0.06	9690	1249	613	1566
14	9	5	15	10	5	1356.8	913.59	0.15	9567	1239	610	1555
14	10	4	13	9	4	980.1	1066.77	0.05	9867	1260	615	1574
14	10	4	14	11	4	1336.0	1066.77	0.02	9832	1285	619	1606
14	10	4	15	11	4	1372.3	1066.77	0.08	9727	1273	616	1594
15	1	15	15	0	15	1164.9	288.85	5.58	7408	1053	578	1310
15	1	15	16	2	15	1240.3	288.85	1.04	7353	1056	578	1321
15	2	14	14	1	14	1097.8	323.33	0.76	7844	1059	580	1317
15	2	14	15	1	14	1151.6	323.33	2.14	7236	1055	577	1323
15	2	14	16	3	14	1248.5	323.33	1.30	7358	1063	578	1336
15	3	13	14	2	13	1088.7	365.61	0.88	7859	1068	580	1332
15	3	13	15	2	13	1129.8	365.61	1.17	7429	1063	578	1338
15	3	13	16	4	13	1263.2	365.61	1.18	7586	1074	580	1354
15	4	12	14	3	12	1073.7	422.62	0.73	8081	1081	582	1356
15	4	12	15	3	12	1110.6	422.62	0.86	7757	1078	580	1357
15	4	12	16	5	12	1279.4	422.62	0.98	7859	1092	582	1380
15	5	11	14	4	11	1057.5	495.88	0.55	8347	1101	585	1382

15	5	11	15	4	11	1094.0	495.88	0.59	8042	1096	583	1383
15	5	11	16	6	11	1295.6	495.88	0.76	8140	1114	586	1408
15	6	10	14	5	10	1041.3	585.36	0.38	8616	1124	589	1413
15	6	10	15	5	10	1077.7	585.36	0.37	8323	1119	587	1413
15	6	10	16	7	10	1311.7	585.36	0.54	8417	1139	590	1439
15	7	9	14	6	9	1025.2	690.95	0.25	8883	1149	593	1445
15	7	9	15	6	9	1061.6	690.95	0.21	8598	1143	591	1443
15	7	9	16	8	9	1327.6	690.95	0.36	8686	1164	594	1470
15	8	8	14	7	8	1009.2	812.53	0.15	9134	1176	598	1480
15	8	8	15	7	8	1045.6	812.53	0.11	8862	1170	596	1477
15	8	8	16	9	8	1343.5	812.53	0.22	8939	1193	599	1504
15	9	7	14	8	7	993.4	949.98	0.08	9364	1207	605	1518
15	9	7	15	8	7	1029.8	949.98	0.05	9110	1200	602	1512
15	9	7	16	10	7	1359.2	949.98	0.12	9176	1223	605	1539
15	10	6	14	9	6	977.7	1103.14	0.04	9567	1239	610	1555
15	10	6	15	9	6	1014.0	1103.14	0.02	9337	1231	607	1548
15	10	6	16	11	6	1374.7	1103.14	0.07	9385	1253	611	1573
16	0	16	16	1	16	1169.2	324.12	5.15		1048	576	1315
16	0	16	17	1	16	1232.5	324.12	1.09		1050	576	1319
16	1	15	15	0	15	1106.4	347.33	0.88		1051	576	1316
16	1	15	16	2	15	1181.8	347.33	2.18		1052	576	1320
16	1	15	17	2	15	1230.3	347.33	1.64		1053	576	1324
16	2	14	15	1	14	1106.9	368.04	1.25		1054	576	1324
16	2	14	16	3	14	1203.7	368.04	1.32		1060	577	1336
16	2	14	17	3	14	1245.9	368.04	1.22		1059	577	1336
16	3	13	15	2	13	1090.3	405.13	0.83		1063	578	1336
16	3	13	16	4	13	1223.6	405.13	1.10		1073	579	1352
16	3	13	17	4	13	1265.1	405.13	1.03		1074	579	1353
16	4	12	15	3	12	1071.6	461.58	0.63		1075	580	1354
16	4	12	16	5	12	1240.4	461.58	0.85		1089	581	1377
16	4	12	17	5	12	1281.7	461.58	0.85		1089	581	1375
16	5	11	15	4	11	1055.1	534.78	0.47		1092	582	1380
16	5	11	16	6	11	1256.7	534.78	0.59		1109	585	1405
16	5	11	17	6	11	1298.0	534.78	0.65		1108	584	1401
16	6	10	15	5	10	1038.9	624.23	0.33		1114	586	1408
16	6	10	16	7	10	1272.8	624.23	0.37		1134	588	1434
16	6	10	17	7	10	1314.1	624.23	0.47		1130	588	1429
16	7	9	15	6	9	1022.8	729.80	0.21		1139	590	1439
16	7	9	16	8	9	1288.8	729.80	0.21		1160	593	1465
16	7	9	17	8	9	1330.0	729.80	0.31		1155	592	1458
16	8	8	15	7	8	1006.8	851.37	0.13		1104	594	1470
16	8	8	16	9	8	1304.6	851.37	0.11		1187	598	1497
16	8	8	17	9	8	1345.9	851.37	0.19		1181	596	1489
16	9	7	15	8	7	990.9	988.79	0.07		1193	599	1504
16	9	7	16	10	7	1320.4	988.79	0.05		1216	603	1530
16	9	7	17	10	7	1361.6	988.79	0.11		1209	601	1520
16	10	6	15	9	6	975.2	1141.95	0.04		1223	605	1539
16	10	6	16	11	6	1335.9	1141.95	0.02		1245	609	1564
16	10	6	17	11	6	1377.2	1141.95	0.06		1237	607	1553
17	1	17	17	0	17	1165.5	365.65	4.56		1045	575	1313
17	1	17	18	2	17	1247.8	365.65	0.76		1051	575	1323
17	2	16	16	1	16	1090.4	402.90	0.54		1052	576	1322
17	2	16	17	1	16	1153.7	402.90	1.80		1052	575	1320
17	2	16	18	3	16	1254.1	402.90	0.97		1061	577	1335

17	3	15	16	2	15	1083.2	445.98	0.65	1062	577	1334
17	3	15	17	2	15	1131.6	445.98	0.91	1061	577	1335
17	3	15	18	4	15	1268.0	445.98	0.88	1074	579	1352
17	4	14	16	3	14	1068.8	502.95	0.54	1073	579	1352
17	4	14	17	3	14	1111.0	502.95	0.66	1072	578	1349
17	4	14	18	5	14	1284.2	502.95	0.73	1089	581	1372
17	5	13	16	4	13	1052.7	576.12	0.40	1089	581	1375
17	5	13	17	4	13	1094.1	576.12	0.46	1090	581	1372
17	5	13	18	6	13	1300.4	576.12	0.56	1107	584	1396
17	6	12	16	5	12	1036.4	665.54	0.28	1108	584	1401
17	6	12	17	5	12	1077.8	665.54	0.29	1107	584	1397
17	6	12	18	7	12	1316.5	665.54	0.39	1126	587	1421
17	7	11	16	6	11	1020.4	771.09	0.18	1130	588	1429
17	7	11	17	6	11	1061.7	771.09	0.16	1128	587	1424
17	7	11	18	8	11	1332.5	771.09	0.26	1149	591	1449
17	8	10	16	7	10	1004.4	892.63	0.11	1155	592	1458
17	8	10	17	7	10	1045.7	892.63	0.09	1152	591	1452
17	8	10	18	9	10	1348.3	892.63	0.16	1174	595	1477
17	9	9	16	8	9	988.5	1030.05	0.06	1181	596	1489
17	9	9	17	8	9	1029.8	1030.05	0.04	1177	595	1482
17	9	9	18	10	9	1364.0	1030.05	0.09	1198	599	1507
17	10	8	16	9	8	972.8	1183.18	0.03	1209	601	1520
17	10	8	17	9	8	1014.1	1183.18	0.02	1203	600	1512
17	10	8	18	11	8	1379.6	1183.18	0.05	1225	604	1538
18	0	18	18	1	18	1168.6	406.09	4.06	1045	574	1312
18	0	18	19	1	18	1241.7	406.09	0.73	1055	575	1330
18	1	17	17	0	17	1097.4	433.78	0.57	1050	575	1321
18	1	17	18	2	17	1179.7	433.78	1.75	1055	575	1326
18	1	17	19	2	17	1236.1	433.78	1.20	1063	576	1336
18	2	16	17	1	16	1101.3	455.28	0.92	1056	576	1328
18	2	16	18	3	16	1201.8	455.28	0.98	1065	577	1342
18	2	16	19	3	16	1249.5	455.28	0.93	1069	576	1348
18	3	15	17	2	15	1086.7	490.89	0.63	1062	576	1337
18	3	15	18	4	15	1223.1	490.89	0.81	1075	578	1354
18	3	15	19	4	15	1269.5	490.89	0.75	1078	578	1361
18	4	14	17	3	14	1067.1	546.84	0.46	1073	578	1350
18	4	14	18	5	14	1240.3	546.84	0.64	1090	581	1373
18	4	14	19	5	14	1286.5	546.84	0.61	1092	581	1377
18	5	13	17	4	13	1050.3	619.90	0.34	1089	581	1372
18	5	13	18	6	13	1256.6	619.90	0.45	1107	584	1394
18	5	13	19	6	13	1302.8	619.90	0.47	1109	583	1399
18	6	12	17	5	12	1034.0	709.29	0.23	1107	584	1396
18	6	12	18	7	12	1272.7	709.29	0.29	1126	587	1420
18	6	12	19	7	12	1318.9	709.29	0.33	1128	586	1423
18	7	11	17	6	11	1017.9	814.81	0.15	1126	587	1421
18	7	11	18	8	11	1288.7	814.81	0.17	1147	590	1447
18	7	11	19	8	11	1334.9	814.81	0.22	1148	590	1449
18	8	10	17	7	10	1002.0	936.34	0.09	1149	591	1449
18	8	10	18	9	10	1304.6	936.34	0.09	1171	594	1474
18	8	10	19	9	10	1350.7	936.34	0.13	1171	593	1475
18	9	9	17	8	9	986.1	1073.73	0.05	1174	595	1477
18	9	9	18	10	9	1320.3	1073.73	0.04	1195	598	1503
18	9	9	19	10	9	1366.4	1073.73	0.07	1194	597	1502
18	10	8	17	9	8	970.4	1226.86	0.02	1198	599	1507

18	10	8	18	11	8	1335.9	1226.86	0.02	1221	603	1532
18	10	8	19	11	8	1382.0	1226.86	0.04	1218	602	1530
19	1	19	19	0	19	1166.1	451.60	3.49	1051	574	1319
19	1	19	20	2	19	1255.6	451.60	0.52	1062	575	1337
19	2	18	18	1	18	1082.8	491.93	0.37	1056	575	1328
19	2	18	19	1	18	1155.8	491.93	1.43	1062	575	1336
19	2	18	20	3	18	1260.1	491.93	0.69	1073	577	1352
19	3	17	18	2	17	1077.3	536.09	0.46	1066	577	1343
19	3	17	19	2	17	1133.8	536.09	0.67	1073	577	1351
19	3	17	20	4	17	1272.9	536.09	0.63	1085	578	1367
19	4	16	18	3	16	1064.0	593.07	0.38	1078	578	1358
19	4	16	19	3	16	1111.7	593.07	0.47	1081	578	1365
19	4	16	20	5	16	1288.9	593.07	0.51	1098	580	1386
19	5	15	18	4	15	1047.9	666.12	0.28	1092	581	1377
19	5	15	19	4	15	1094.2	666.12	0.33	1094	580	1382
19	5	15	20	6	15	1305.2	666.12	0.39	1113	582	1406
19	6	14	18	5	14	1031.6	755.47	0.19	1109	583	1399
19	6	14	19	5	14	1077.9	755.47	0.21	1110	583	1402
19	6	14	20	7	14	1321.3	755.47	0.27	1132	585	1429
19	7	13	18	6	13	1015.5	860.97	0.12	1128	586	1423
19	7	13	19	6	13	1061.7	860.97	0.12	1129	586	1427
19	7	13	20	8	13	1337.3	860.97	0.18	1151	589	1452
19	8	12	18	7	12	999.5	982.48	0.07	1148	590	1449
19	8	12	19	7	12	1045.7	982.48	0.06	1149	589	1450
19	8	12	20	9	12	1353.2	982.48	0.11	1172	592	1475
19	9	11	18	8	11	983.7	1119.86	0.04	1171	593	1475
19	9	11	19	8	11	1029.8	1119.86	0.03	1171	593	1475
19	9	11	20	10	11	1360.9	1119.86	0.06	1194	596	1500
19	10	10	18	9	10	968.0	1272.97	0.02	1194	597	1502
19	10	10	19	9	10	1014.1	1272.97	0.01	1194	597	1501
19	10	10	20	11	10	1384.4	1272.97	0.03	1216	600	1526
20	0	20	20	1	20	1168.2	497.05	3.00	1058	575	1331
20	0	20	21	1	20	1251.2	497.05	0.46	1069	575	1343
20	1	19	19	0	19	1088.0	529.65	0.35	1062	575	1337
20	1	19	20	2	19	1177.5	529.65	1.34	1070	575	1347
20	1	19	21	2	19	1242.6	529.65	0.81	1076	575	1346
20	2	18	19	1	18	1095.1	552.62	0.62	1069	576	1347
20	2	18	20	3	18	1199.4	552.62	0.70	1081	577	1360
20	2	18	21	3	18	1253.0	552.62	0.67	1084	576	1359
20	3	17	19	2	17	1083.2	586.72	0.46	1079	576	1358
20	3	17	20	4	17	1222.3	586.72	0.56	1091	577	1375
20	3	17	21	4	17	1273.6	586.72	0.52	1092	577	1372
20	4	16	19	3	16	1062.8	641.91	0.32	1085	578	1370
20	4	16	20	5	16	1240.1	641.91	0.45	1102	580	1390
20	4	16	21	5	16	1291.2	641.91	0.42	1103	579	1389
20	5	15	19	4	15	1045.6	714.79	0.23	1098	580	1387
20	5	15	20	6	15	1256.5	714.79	0.32	1117	582	1410
20	5	15	21	6	15	1307.6	714.79	0.32	1118	582	1407
20	6	14	19	5	14	1029.2	804.10	0.16	1113	582	1406
20	6	14	20	7	14	1272.7	804.10	0.21	1134	585	1431
20	6	14	21	7	14	1323.7	804.10	0.22	1134	585	1431
20	7	13	19	6	13	1013.1	909.57	0.10	1132	585	1429
20	7	13	20	8	13	1288.7	909.57	0.12	1153	588	1453
20	7	13	21	8	13	1339.7	909.57	0.14	1153	588	1451

20	8	12	19	7	12	997.1	1031.05	0.06	1151	589	1452
20	8	12	20	9	12	1304.6	1031.05	0.07	1173	592	1476
20	8	12	21	9	12	1355.6	1031.05	0.09	1172	591	1473
20	9	11	19	8	11	981.3	1168.42	0.03	1172	592	1475
20	9	11	20	10	11	1320.3	1168.42	0.03	1194	595	1500
20	9	11	21	10	11	1371.3	1168.42	0.05	1191	595	1498
20	10	10	19	9	10	965.5	1321.52	0.02	1194	596	1500
20	10	10	20	11	10	1335.9	1321.52	0.02	1215	599	1525
20	10	10	21	11	10	1386.9	1321.52	0.03	1212	599	1521
21	1	21	21	0	21	1166.4	546.68	2.51	1067	574	1342
21	1	21	22	2	21	1263.7	546.68	0.34	1074	575	1345
21	2	20	20	1	20	1074.8	590.38	0.23	1069	575	1344
21	2	20	21	1	20	1157.9	590.38	1.08	1077	575	1348
21	2	20	22	3	20	1266.3	590.38	0.46	1082	576	1353
21	3	19	20	2	19	1071.3	635.92	0.30	1080	575	1356
21	3	19	21	2	19	1136.3	635.92	0.47	1083	576	1355
21	3	19	22	4	19	1277.9	635.92	0.42	1091	577	1368
21	4	18	20	3	18	1059.0	692.99	0.25	1090	578	1372
21	4	18	21	3	18	1112.7	692.99	0.32	1093	577	1372
21	4	18	22	5	18	1293.7	692.99	0.34	1105	579	1383
21	5	17	20	4	17	1043.1	765.90	0.19	1103	579	1389
21	5	17	21	4	17	1094.5	765.90	0.23	1105	579	1387
21	5	17	22	6	17	1310.0	765.90	0.26	1118	581	1402
21	6	16	20	5	16	1026.8	855.16	0.13	1118	582	1407
21	6	16	21	5	16	1078.0	855.16	0.15	1119	582	1406
21	6	16	22	7	16	1326.1	855.16	0.18	1135	584	1421
21	7	15	20	6	15	1010.7	960.60	0.08	1134	585	1431
21	7	15	21	6	15	1061.8	960.60	0.08	1135	584	1427
21	7	15	22	8	15	1342.1	960.60	0.12	1151	587	1442
21	8	14	20	7	14	994.7	1082.07	0.05	1153	588	1451
21	8	14	21	7	14	1045.7	1082.07	0.05	1152	587	1450
21	8	14	22	9	14	1358.0	1082.07	0.07	1170	590	1463
21	9	13	20	8	13	978.8	1219.42	0.03	1172	591	1473
21	9	13	21	8	13	1029.9	1219.42	0.02	1171	591	1470
21	9	13	22	10	13	1373.7	1219.42	0.04	1187	594	1485
21	10	12	20	9	12	963.1	1372.51	0.01	1191	595	1498
21	10	12	21	9	12	1014.1	1372.51	0.01	1190	594	1493
21	10	12	22	11	12	1389.3	1372.51	0.02	1206	598	1508
22	0	22	22	1	22	1167.9	596.99	2.09	1073	574	1344
22	0	22	23	1	22	1261.1	596.99	0.29	1073	574	1335
22	1	21	21	0	21	1078.3	634.81	0.20	1074	574	1342
22	1	21	22	2	21	1175.5	634.81	0.97	1075	574	1338
22	1	21	23	2	21	1249.8	634.81	0.51	1076	574	1327
22	2	20	21	1	20	1088.3	659.99	0.39	1076	575	1339
22	2	20	22	3	20	1196.7	659.99	0.48	1081	575	1342
22	2	20	23	3	20	1256.8	659.99	0.46	1081	574	1334
22	3	19	21	2	19	1079.6	692.71	0.31	1084	576	1348
22	3	19	22	4	19	1221.1	692.71	0.37	1092	576	1359
22	3	19	23	4	19	1277.5	692.71	0.34	1090	576	1350
22	4	18	21	3	18	1058.8	746.85	0.21	1092	577	1367
22	4	18	22	5	18	1239.8	746.85	0.29	1103	578	1376
22	4	18	23	5	18	1295.8	746.85	0.27	1102	578	1368
22	5	17	21	4	17	1040.9	819.47	0.15	1105	579	1383
22	5	17	22	6	17	1256.4	819.47	0.21	1118	581	1394

22	5	17	23	6	17	1312.4	819.47	0.21	1116	580	1386
22	6	16	21	5	16	1024.5	908.66	0.10	1118	581	1402
22	6	16	22	7	16	1272.6	908.66	0.14	1134	583	1413
22	6	16	23	7	16	1328.5	908.66	0.14	1132	583	1406
22	7	15	21	6	15	1008.3	1014.07	0.06	1135	584	1421
22	7	15	22	8	15	1288.7	1014.07	0.08	1150	586	1434
22	7	15	23	8	15	1344.6	1014.07	0.09	1148	586	1426
22	8	14	21	7	14	992.3	1135.52	0.04	1151	587	1442
22	8	14	22	9	14	1304.6	1135.52	0.05	1167	590	1456
22	8	14	23	9	14	1360.4	1135.52	0.06	1164	589	1447
22	9	13	21	8	13	976.4	1272.86	0.02	1170	590	1463
22	9	13	22	10	13	1320.3	1272.86	0.02	1186	594	1478
22	9	13	23	10	13	1376.2	1272.86	0.03	1183	592	1469
22	10	12	21	9	12	960.7	1425.94	0.01	1187	594	1485
22	10	12	22	11	12	1335.9	1425.94	0.01	1204	597	1499
22	10	12	23	11	12	1391.8	1425.94	0.02	1201	596	1490
23	1	23	23	0	23	1166.7	650.85	1.70	1072	574	1335
23	1	23	24	2	23	1272.0	650.85	0.21	1074	574	1327
23	2	22	22	1	22	1066.6	698.20	0.14	1075	575	1337
23	2	22	23	1	22	1159.8	698.20	0.77	1074	573	1322
23	2	22	24	3	22	1272.8	698.20	0.29	1081	573	1326
23	3	21	22	2	21	1064.9	745.44	0.19	1082	575	1342
23	3	21	23	2	21	1139.2	745.44	0.32	1081	573	1326
23	3	21	24	4	21	1283.0	745.44	0.27	1090	574	1334
23	4	20	22	3	20	1054.0	802.70	0.16	1090	577	1351
23	4	20	23	3	20	1114.0	802.70	0.20	1090	575	1342
23	4	20	24	5	20	1298.4	802.70	0.22	1101	576	1351
23	5	19	22	4	19	1038.4	875.47	0.12	1102	578	1368
23	5	19	23	4	19	1094.8	875.47	0.15	1101	577	1360
23	5	19	24	6	19	1314.8	875.47	0.16	1113	578	1369
23	6	18	22	5	18	1022.1	964.61	0.08	1116	580	1386
23	6	18	23	5	18	1078.1	964.61	0.09	1115	580	1377
23	6	18	24	7	18	1330.9	964.61	0.11	1127	580	1387
23	7	17	22	6	17	1005.9	1069.99	0.05	1132	583	1406
23	7	17	23	6	17	1061.8	1069.99	0.06	1130	582	1396
23	7	17	24	8	17	1347.0	1069.99	0.07	1143	583	1407
23	8	16	22	7	16	989.9	1191.42	0.03	1148	586	1426
23	8	16	23	7	16	1045.8	1191.42	0.03	1146	584	1417
23	8	16	24	9	16	1362.9	1191.42	0.04	1158	586	1429
23	9	15	22	8	15	974.0	1328.75	0.02	1164	589	1447
23	9	15	23	8	15	1029.9	1328.75	0.01	1162	588	1437
23	9	15	24	10	15	1378.6	1328.75	0.02	1175	590	1449
23	10	14	22	9	14	958.2	1481.83	0.01	1183	592	1469
23	10	14	23	9	14	1014.1	1481.83	0.01	1179	591	1458
23	10	14	24	11	14	1394.2	1481.83	0.01	1193	593	1470
24	0	24	24	1	24	1167.6	705.92	1.38	1071	574	1321
24	0	24	25	1	24	1271.0	705.92	0.17	1077	570	1312
24	1	23	23	0	23	1068.4	749.12	0.12	1076	573	1324
24	1	23	24	2	23	1173.7	749.12	0.66	1076	571	1305
24	1	23	25	2	23	1257.7	749.12	0.30	1079	568	1299
24	2	22	23	1	22	1080.8	777.26	0.22	1078	570	1313
24	2	22	24	3	22	1193.8	777.26	0.31	1081	570	1309
24	2	22	25	3	22	1260.8	777.26	0.30	1082	568	1305
24	3	21	23	2	21	1075.7	808.93	0.20	1082	571	1318

24	3	21	24	4	21	1219.5	808.93	0.23	1090	572	1325
24	3	21	25	4	21	1281.1	808.93	0.21	1090	570	1323
24	4	20	23	3	20	1055.1	861.68	0.13	1090	573	1333
24	4	20	24	5	20	1239.5	861.68	0.18	1099	574	1341
24	4	20	25	5	20	1300.4	861.68	0.17	1100	572	1337
24	5	19	23	4	19	1036.3	933.94	0.09	1101	576	1351
24	5	19	24	6	19	1256.3	933.94	0.13	1112	577	1359
24	5	19	25	6	19	1317.1	933.94	0.13	1112	575	1354
24	6	18	23	5	18	1019.7	1023.01	0.06	1113	578	1370
24	6	18	24	7	18	1272.6	1023.01	0.09	1126	579	1379
24	6	18	25	7	18	1333.4	1023.01	0.09	1126	578	1373
24	7	17	23	6	17	1003.5	1128.35	0.04	1127	580	1387
24	7	17	24	8	17	1288.6	1128.35	0.05	1141	581	1398
24	7	17	25	8	17	1349.4	1128.35	0.06	1140	580	1394
24	8	16	23	7	16	987.4	1249.76	0.02	1143	583	1407
24	8	16	24	9	16	1304.5	1249.76	0.03	1157	585	1419
24	8	16	25	9	16	1365.3	1249.76	0.03	1156	584	1413
24	9	15	23	8	15	971.5	1387.08	0.01	1158	586	1429
24	9	15	24	10	15	1320.3	1387.08	0.01	1174	588	1440
24	9	15	25	10	15	1381.1	1387.08	0.02	1172	587	1434
24	10	14	23	9	14	955.8	1540.16	0.01	1175	590	1449
24	10	14	24	11	14	1335.9	1540.16	0.01	1189	592	1461
24	10	14	25	11	14	1396.7	1540.16	0.01	1189	591	1455
25	1	25	25	0	25	1166.9	764.10	1.09	1070	569	1304
25	1	25	26	2	25	1280.5	764.10	0.13	1077	567	1300
25	2	24	24	1	24	1058.2	815.34	0.08	1075	571	1313
25	2	24	25	1	24	1161.5	815.34	0.51	1074	568	1294
25	2	24	26	3	24	1279.7	815.34	0.18	1082	567	1302
25	3	23	24	2	23	1058.2	864.62	0.11	1082	570	1312
25	3	23	25	2	23	1142.2	864.62	0.21	1083	567	1299
25	3	23	26	4	23	1288.3	864.62	0.16	1091	568	1312
25	4	22	24	3	22	1048.8	922.23	0.10	1089	571	1321
25	4	22	25	3	22	1115.9	922.23	0.12	1090	569	1315
25	4	22	26	5	22	1303.2	922.23	0.13	1100	569	1327
25	5	21	24	4	21	1033.6	994.83	0.07	1100	573	1336
25	5	21	25	4	21	1095.2	994.83	0.09	1099	571	1332
25	5	21	26	6	21	1319.5	994.83	0.10	1113	571	1345
25	6	20	24	5	20	1017.3	1083.85	0.05	1112	575	1354
25	6	20	25	5	20	1078.2	1083.85	0.06	1112	573	1347
25	6	20	26	7	20	1335.8	1083.85	0.07	1126	574	1362
25	7	19	24	6	19	1001.1	1189.15	0.03	1126	578	1373
25	7	19	25	6	19	1061.9	1189.15	0.03	1126	576	1366
25	7	19	26	8	19	1351.8	1189.15	0.04	1140	577	1383
25	8	18	24	7	18	985.0	1310.55	0.02	1140	580	1394
25	8	18	25	7	18	1045.8	1310.55	0.02	1140	579	1386
25	8	18	26	9	18	1367.8	1310.55	0.03	1155	580	1403
25	9	17	24	8	17	969.1	1447.86	0.01	1156	584	1413
25	9	17	25	8	17	1029.9	1447.86	0.01	1156	582	1406
25	9	17	26	10	17	1383.5	1447.86	0.01	1170	584	1423
25	10	16	24	9	16	953.4	1600.94	0.00	1172	587	1434
25	10	16	25	9	16	1014.1	1600.94	0.00	1171	586	1427
25	10	16	26	11	16	1399.1	1600.94	0.01	1186	588	1443
26	0	26	26	1	26	1167.5	823.84	0.86	1074	568	1291
26	0	26	27	1	26	1280.9	823.84	0.10	1079	565	1291

26	1	25	25	0	25	1058.5	872.46	0.06	1075	567	1299
26	1	25	26	2	25	1172.1	872.46	0.42	1076	565	1287
26	1	25	27	2	25	1266.2	872.46	0.16	1078	562	1279
26	2	24	25	1	24	1072.6	904.31	0.12	1079	565	1293
26	2	24	26	3	24	1190.7	904.31	0.19	1085	564	1292
26	2	24	27	3	24	1265.4	904.31	0.18	1086	561	1283
26	3	23	25	2	23	1071.4	935.42	0.12	1086	565	1296
26	3	23	26	4	23	1217.5	935.42	0.13	1094	566	1307
26	3	23	27	4	23	1284.4	935.42	0.13	1096	564	1302
26	4	22	25	3	22	1051.6	986.48	0.08	1092	567	1313
26	4	22	26	5	22	1238.9	986.48	0.11	1102	568	1324
26	4	22	27	5	22	1304.8	986.48	0.10	1103	566	1319
26	5	21	25	4	21	1031.8	1058.23	0.05	1100	569	1329
26	5	21	26	6	21	1256.1	1058.23	0.08	1113	570	1340
26	5	21	27	6	21	1321.9	1058.23	0.07	1113	568	1335
26	6	20	25	5	20	1014.9	1147.14	0.04	1113	571	1345
26	6	20	26	7	20	1272.5	1147.14	0.05	1125	572	1360
26	6	20	27	7	20	1338.2	1147.14	0.05	1125	571	1354
26	7	19	25	6	19	998.7	1252.40	0.02	1126	574	1362
26	7	19	26	8	19	1288.6	1252.40	0.03	1141	575	1380
26	7	19	27	8	19	1354.3	1252.40	0.03	1139	573	1373
26	8	18	25	7	18	982.6	1373.78	0.01	1140	577	1383
26	8	18	26	9	18	1304.5	1373.78	0.02	1155	579	1400
26	8	18	27	9	18	1370.2	1373.78	0.02	1153	577	1393
26	9	17	25	8	17	966.7	1511.09	0.01	1155	580	1403
26	9	17	26	10	17	1320.3	1511.09	0.01	1170	582	1420
26	9	17	27	10	17	1386.0	1511.09	0.01	1168	580	1413
26	10	16	25	9	16	950.9	1664.17	0.00	1170	584	1423
26	10	16	26	11	16	1335.9	1664.17	0.00	1185	586	1439
26	10	16	27	11	16	1401.6	1664.17	0.01	1184	584	1434
27	1	27	27	0	27	1167.0	886.40	0.67	1075	565	1285
27	1	27	28	2	27	1289.2	886.40	0.07	1079	563	1278
27	2	26	26	1	26	1049.6	941.73	0.04	1078	566	1293
27	2	26	27	1	26	1163.0	941.73	0.32	1079	562	1278
27	2	26	28	3	26	1286.8	941.73	0.10	1083	560	1277
27	3	25	26	2	25	1061.2	993.39	0.06	1084	565	1291
27	3	25	27	2	25	1145.3	993.39	0.13	1084	560	1276
27	3	25	28	4	25	1293.7	993.39	0.09	1090	560	1283
27	4	24	26	3	24	1043.5	1051.55	0.06	1092	565	1303
27	4	24	27	3	24	1118.2	1051.55	0.07	1093	561	1292
27	4	24	28	5	24	1307.9	1051.55	0.08	1100	562	1300
27	5	23	26	4	23	1028.9	1124.01	0.04	1102	566	1318
27	5	23	27	4	23	1095.8	1124.01	0.05	1103	564	1310
27	5	23	28	6	23	1324.3	1124.01	0.06	1111	564	1319
27	6	22	26	5	22	1012.5	1212.87	0.03	1113	568	1335
27	6	22	27	5	22	1078.4	1212.87	0.03	1113	566	1329
27	6	22	28	7	22	1340.6	1212.87	0.04	1123	567	1338
27	7	21	26	6	21	996.2	1318.10	0.02	1125	571	1354
27	7	21	27	6	21	1062.0	1318.10	0.02	1125	569	1347
27	7	21	28	8	21	1356.7	1318.10	0.02	1137	569	1357
27	8	20	26	7	20	980.2	1439.46	0.01	1139	573	1373
27	8	20	27	7	20	1045.8	1439.46	0.01	1139	572	1366
27	8	20	28	9	20	1372.7	1439.46	0.01	1150	572	1377
27	9	19	26	8	19	964.2	1576.77	0.01	1153	577	1393

27	9	19	27	8	19	1029.9	1576.77	0.01	1154	575	1386
27	9	19	28	10	19	1388.4	1576.77	0.01	1164	576	1396
27	10	18	26	9	18	948.4	1729.86	0.00	1168	580	1413
27	10	18	27	9	18	1014.1	1729.86	0.00	1168	578	1406
27	10	18	28	11	18	1404.1	1729.86	0.00	1178	580	1415
28	0	28	28	1	28	1167.4	950.76	0.51	1078	562	1276
28	0	28	29	1	28	1290.7	950.76	0.05	1077	558	1261
28	1	27	27	0	27	1048.6	1004.75	0.03	1080	562	1276
28	1	27	28	2	27	1170.8	1004.75	0.26	1079	558	1261
28	1	27	29	2	27	1275.4	1004.75	0.09	1070	552	1239
28	2	26	27	1	26	1063.7	1041.01	0.06	1079	558	1261
28	2	26	28	3	26	1187.6	1041.01	0.12	1077	555	1254
28	2	26	29	3	26	1270.6	1041.01	0.10	1070	549	1230
28	3	25	27	2	25	1066.5	1072.19	0.07	1081	555	1260
28	3	25	28	4	25	1214.9	1072.19	0.07	1086	555	1265
28	3	25	29	4	25	1287.5	1072.19	0.07	1081	552	1249
28	4	24	27	3	24	1048.4	1121.30	0.04	1090	558	1280
28	4	24	28	5	24	1238.2	1121.30	0.06	1097	559	1288
28	4	24	29	5	24	1309.0	1121.30	0.06	1090	556	1273
28	5	23	27	4	23	1027.5	1192.36	0.03	1100	562	1299
28	5	23	28	6	23	1255.9	1192.36	0.04	1108	561	1307
28	5	23	29	6	23	1326.6	1192.36	0.04	1102	558	1293
28	6	22	27	5	22	1010.2	1281.06	0.02	1111	564	1319
28	6	22	28	7	22	1272.4	1281.06	0.03	1120	564	1327
28	6	22	29	7	22	1343.0	1281.06	0.03	1114	560	1312
28	7	21	27	6	21	993.8	1386.24	0.01	1123	567	1338
28	7	21	28	8	21	1288.6	1386.24	0.02	1133	567	1346
28	7	21	29	8	21	1359.1	1386.24	0.02	1127	564	1330
28	8	20	27	7	20	977.7	1507.59	0.01	1137	569	1357
28	8	20	28	9	20	1304.5	1507.59	0.01	1146	570	1364
28	8	20	29	9	20	1375.1	1507.59	0.01	1141	567	1350
28	9	19	27	8	19	961.8	1644.90	0.00	1150	572	1377
28	9	19	28	10	19	1320.3	1644.90	0.01	1160	574	1385
28	9	19	29	10	19	1390.9	1644.90	0.01	1155	571	1370
28	10	18	27	9	18	946.0	1798.01	0.00	1164	576	1396
28	10	18	28	11	18	1335.9	1798.01	0.00	1174	577	1405
28	10	18	29	11	18	1406.6	1798.01	0.00	1169	575	1390
29	1	29	29	0	29	1167.1	1017.74	0.39	1079	558	1260
29	1	29	30	2	29	1298.0	1017.74	0.04	1072	553	1241
29	2	28	28	1	28	1040.8	1077.33	0.02	1077	558	1262
29	2	28	29	1	28	1164.1	1077.33	0.19	1071	553	1239
29	2	28	30	3	28	1294.3	1077.33	0.05	1069	550	1226
29	3	27	28	2	27	1043.9	1131.72	0.03	1079	555	1254
29	3	27	29	2	27	1148.4	1131.72	0.08	1068	549	1223
29	3	27	30	4	27	1299.4	1131.72	0.05	1073	549	1230
29	4	26	28	3	26	1037.9	1190.67	0.03	1082	555	1259
29	4	26	29	3	26	1120.9	1190.67	0.04	1074	549	1234
29	4	26	30	5	26	1312.7	1190.67	0.04	1081	550	1243
29	5	25	28	4	25	1024.1	1263.01	0.02	1090	555	1273
29	5	25	29	4	25	1096.7	1263.01	0.03	1085	552	1257
29	5	25	30	6	25	1329.0	1263.01	0.03	1092	552	1261
29	6	24	28	5	24	1007.8	1351.70	0.01	1102	558	1293
29	6	24	29	5	24	1078.6	1351.70	0.02	1096	555	1277
29	6	24	30	7	24	1345.4	1351.70	0.02	1103	554	1280

29	7	23	28	6	23	991.4	1456.84	0.01	1114	560	1312
29	7	23	29	6	23	1062.1	1456.84	0.01	1108	557	1297
29	7	23	30	8	23	1361.6	1456.84	0.01	1117	557	1301
29	8	22	28	7	22	975.3	1578.17	0.01	1127	564	1330
29	8	22	29	7	22	1045.9	1578.17	0.01	1121	560	1317
29	8	22	30	9	22	1377.6	1578.17	0.01	1130	560	1322
29	9	21	28	8	21	959.3	1715.49	0.00	1141	567	1350
29	9	21	29	8	21	1029.9	1715.49	0.00	1135	564	1336
29	9	21	30	10	21	1393.4	1715.49	0.00	1143	564	1340
29	10	20	28	9	20	943.5	1868.61	0.00	1155	571	1370
29	10	20	29	9	20	1014.1	1868.61	0.00	1149	567	1356
29	10	20	30	11	20	1409.1	1868.61	0.00	1157	568	1361
30	0	30	30	1	30	1167.3	1086.69	0.29	1068	553	1240
30	0	30	31	1	30	1300.4	1086.69	0.03	1061	548	1211
30	1	29	29	0	29	1038.9	1145.95	0.02	1071	553	1237
30	1	29	30	2	29	1169.8	1145.95	0.15	1061	547	1207
30	1	29	31	2	29	1285.1	1145.95	0.04	1054	541	1184
30	2	28	29	1	28	1054.2	1187.20	0.03	1063	547	1212
30	2	28	30	3	28	1184.5	1187.20	0.07	1058	544	1192
30	2	28	31	3	28	1276.5	1187.20	0.05	1048	538	1167
30	3	27	29	2	27	1061.0	1219.17	0.04	1060	543	1198
30	3	27	30	4	27	1211.9	1219.17	0.04	1063	543	1201
30	3	27	31	4	27	1290.5	1219.17	0.04	1058	540	1182
30	4	26	29	3	26	1045.4	1266.22	0.02	1068	546	1215
30	4	26	30	5	26	1237.2	1266.22	0.03	1075	546	1225
30	4	26	31	5	26	1313.1	1266.22	0.03	1069	544	1211
30	5	25	29	4	25	1023.3	1336.36	0.02	1081	550	1242
30	5	25	30	6	25	1255.6	1336.36	0.02	1088	549	1245
30	5	25	31	6	25	1331.2	1336.36	0.02	1083	546	1233
30	6	24	29	5	24	1005.5	1424.80	0.01	1092	552	1261
30	6	24	30	7	24	1272.3	1424.80	0.02	1100	551	1263
30	6	24	31	7	24	1347.8	1424.80	0.02	1094	549	1250
30	7	23	29	6	23	989.0	1529.89	0.01	1103	554	1280
30	7	23	30	8	23	1288.5	1529.89	0.01	1112	554	1283
30	7	23	31	8	23	1364.0	1529.89	0.01	1106	552	1270
30	8	22	29	7	22	972.8	1651.21	0.00	1117	557	1301
30	8	22	30	9	22	1304.5	1651.21	0.01	1125	557	1303
30	8	22	31	9	22	1380.0	1651.21	0.01	1119	554	1291
30	9	21	29	8	21	956.8	1788.53	0.00	1130	560	1322
30	9	21	30	10	21	1320.4	1788.53	0.00	1138	561	1323
30	9	21	31	10	21	1395.9	1788.53	0.00	1133	558	1310
30	10	20	29	9	20	941.0	1941.69	0.00	1143	564	1340
30	10	20	30	11	20	1336.0	1941.69	0.00	1152	565	1344
30	10	20	31	11	20	1411.6	1941.69	0.00	1146	562	1332