

Exsolution relationships in a clinopyroxene of average composition $\text{Ca}_{0.43}\text{Mn}_{0.69}\text{Mg}_{0.82}\text{Si}_2\text{O}_6$: X-ray diffraction and analytical electron microscopy¹

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Abstract

A pyroxene of average composition $\text{Ca}_{0.43}\text{Mn}_{0.69}\text{Mg}_{0.82}\text{Si}_2\text{O}_6$ from Balmat, New York is exsolved to coexisting $P2_1/c$ and $C2/c$ phases. Structure refinements were performed in part to limit the compositions of the individual phases, as were plots of cell parameters and average M1-O and M2-O bond distances vs. composition. Site occupancies showed that the phases are manganoan diopside and kanoite. Transmission electron micrographs revealed that the phases are lamellar, share (001) as the interphase boundary, and are 2000 Å wide. X-ray energy dispersive analysis of individual lamellae yielded $\text{Ca}_{0.68}\text{Mn}_{0.44}\text{Mg}_{0.88}\text{Si}_2\text{O}_6$ for the $C2/c$ phase and $\text{Ca}_{0.12}\text{Mn}_{1.02}\text{Mg}_{0.86}\text{Si}_2\text{O}_6$ for the $P2_1/c$ phase. Dark-field imaging revealed the presence of antiphase domain boundaries in the $P2_1/c$ phase, indicating the existence of a $C2/c$ - $P2_1/c$ transition for the Ca-poor phase in the Ca-Mn-Mg pyroxene system. *In situ* heating experiments yield a temperature of the $C2/c$ - $P2_1/c$ inversion of $330 \pm 20^\circ\text{C}$. Observation of antiphase boundary (APB) positions before and after heating through the inversion temperature showed that the APB positions were essentially unchanged, indicating stabilization of APB's by the concentration of Ca or some defect at the APB's. Lattice fringe images across the lamellar boundary (001) indicate that the interface is semi- or completely coherent. The features of this exsolution texture are consistent with initial exsolution by spinodal decomposition or nucleation and subsequent slow cooling in a regionally metamorphosed phase.

Introduction

In the investigation of a magnesian rhodonite from Balmat Mine No. 4, New York (Peacor *et al.*, 1978), a pyroxene coexisting with the rhodonite was qualitatively analyzed and determined to have major Mn and Mg with minor Ca. This is near the ideal composition of kanoite, $\text{MnMgSi}_2\text{O}_6$ (Kobayashi, 1977). Quantitative wavelength dispersive analyses on the electron microprobe were obtained for this pyroxene (Table I). A pale blue schiller observed in the Mn-pyroxene indicated the presence of a periodic microstructure, and preliminary single-crystal and powder

X-ray diffraction photographs confirmed that it did indeed consist of two pyroxenes. We report results obtained primarily through single-crystal X-ray diffraction and further characterization of the two phases by scanning transmission electron microscopy in conjunction with X-ray energy-dispersive analysis.

Our two samples, provided by the generosity of Dr. David Dill of the mine staff, consist primarily of alternating bands of bright pink rhodonite, buff-colored pyroxene, and quartz. They were found by miners at Balmat and were saved only because of their unique and colorful appearance, and are from a complexly interlayered sequence of metamorphosed, impure, siliceous carbonates and evaporites typical of the southwest part of the Grenville Province (Engel, 1956). The majority of the units consist of calcitic and dolomitic marbles with variable amounts of

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Table 2

Mn-Diopside

H	K	L	F (OBS)	F (CALC)					
7	1	-7	26.1	23.3	4	2	-4	35.9	34.8
6	0	-6	32.2	31.0	6	2	-4	5.5	5.5
8	0	-6	12.9	11.0	8	2	-4	12.2	13.3
10	0	-6	74.5	69.8	10	2	-4	9.4	10.0
5	1	-6	20.7	18.7	12	2	-4	26.5	25.5
7	1	-6	30.7	28.8	5	3	-4	22.6	24.6
9	1	-6	12.1	13.3	7	3	-4	4.9	4.5
6	2	-6	17.3	16.9	9	3	-4	25.2	24.3
8	2	-6	19.4	18.8	11	3	-4	16.0	16.4
10	2	-6	5.9	6.5	4	4	-4	18.5	18.6
5	3	-6	20.2	17.8	6	4	-4	6.5	7.2
7	3	-6	16.7	17.4	8	4	-4	15.0	14.6
9	3	-6	6.0	7.2	10	4	-4	31.0	30.2
6	4	-6	13.3	13.8	12	4	-4	26.1	25.0
8	4	-6	8.7	8.6	5	5	-4	16.8	17.5
5	5	-6	2.8	4.9	7	5	-4	80.4	82.0
7	5	-6	35.4	33.3	9	5	-4	3.3	1.3
6	6	-6	19.6	18.7	11	5	-4	25.1	25.3
5	1	-5	10.9	11.2	6	6	-4	31.3	31.6
7	1	-5	33.6	34.0	8	6	-4	26.2	24.8
9	1	-5	2.4	4.1	10	6	-4	30.7	30.7
11	1	-5	7.1	7.2	5	7	-4	22.5	22.8
6	2	-5	19.5	19.1	7	7	-4	14.0	15.3
8	2	-5	55.1	56.5	9	7	-4	28.9	28.2
10	2	-5	1.8	2.3	6	8	-4	6.6	1.0
12	2	-5	38.2	36.0	8	8	-4	12.8	12.6
5	3	-5	48.3	46.5	7	9	-4	4.0	4.3
7	3	-5	15.1	15.4	3	1	-3	67.8	66.3
9	3	-5	66.5	63.5	5	1	-3	20.9	21.5
11	3	-5	8.5	9.3	7	1	-3	42.1	44.3
6	4	-5	13.4	13.3	9	1	-3	8.8	9.6
8	4	-5	11.8	13.1	11	1	-3	11.6	11.8
10	4	-5	26.1	23.6	13	1	-3	6.8	7.3
5	5	-5	5.9	6.4	4	2	-3	19.5	20.0
7	5	-5	9.7	10.1	6	2	-3	10.9	11.6
9	5	-5	3.8	3.5	8	2	-3	62.1	62.8
6	6	-5	22.7	22.2	10	2	-3	8.7	8.2
8	6	-5	1.6	1.3	12	2	-3	53.3	49.9
10	6	-5	18.4	18.1	5	3	-3	66.5	73.1
5	7	-5	51.5	50.5	7	3	-3	19.7	21.3
7	7	-5	6.0	5.9	9	3	-3	83.9	80.3
9	7	-5	16.1	17.1	11	3	-3	35.2	34.4
6	8	-5	15.6	12.1	13	3	-3	2.2	3.6
4	0	-4	79.3	83.6	4	4	-3	32.2	34.0
6	0	-4	96.4	103.1	6	4	-3	31.4	34.5
8	0	-4	2.6	2.3	8	4	-3	14.3	15.4
10	0	-4	44.4	43.2	10	4	-3	20.7	20.6
12	0	-4	18.1	17.4	12	4	-3	12.6	12.5
5	1	-4	14.1	13.9	5	5	-3	26.1	28.7
7	1	-4	29.8	28.1	7	5	-3	10.1	10.8
9	1	-4	14.5	14.8	9	5	-3	9.4	9.9
11	1	-4	14.2	14.8	11	5	-3	3.9	3.5
13	1	-4	12.5	11.8	4	6	-3	19.1	20.0
					6	6	-3	15.0	16.1
					8	6	-3	13.6	15.5
					10	6	-3	22.3	21.4
					5	7	-3	45.9	48.3
					7	7	-3	5.8	5.3
					9	7	-3	34.4	34.1
					11	7	-3	8.9	8.2
					6	8	-3	19.0	21.7

8	8	-3	38.5	39.5	4	2	-1	63.6	62.6
10	8	-3	7.8	9.3	6	2	-1	46.3	44.5
5	9	-3	1.3	1.2	8	2	-1	41.4	36.6
7	9	-3	34.8	31.8	10	2	-1	1.8	1.8
9	9	-3	33.5	33.0	12	2	-1	62.7	64.6
6	10	-3	1.4	3.4	3	3	-1	97.2	99.5
4	0	-2	109.3	116.9	5	3	-1	112.6	117.4
6	0	-2	98.2	102.0	7	3	-1	39.9	40.1
8	0	-2	37.7	36.1	9	3	-1	74.8	72.0
10	0	-2	78.2	69.4	11	3	-1	31.2	33.1
12	0	-2	7.5	7.5	13	3	-1	21.0	22.0
3	1	-2	8.1	7.1	2	4	-1	20.3	21.7
5	1	-2	27.4	31.4	4	4	-1	9.5	10.1
7	1	-2	93.9	97.0	6	4	-1	10.2	11.1
9	1	-2	27.1	27.9	8	4	-1	14.6	14.7
11	1	-2	3.5	1.9	10	4	-1	30.7	28.9
13	1	-2	17.4	18.1	12	4	-1	28.2	27.2
4	2	-2	12.4	12.7	3	5	-1	25.0	25.6
6	2	-2	54.7	56.2	5	5	-1	1.7	2.3
8	2	-2	30.4	29.7	7	5	-1	1.6	1.3
10	2	-2	21.1	21.9	9	5	-1	4.0	4.5
12	2	-2	35.2	33.0	11	5	-1	13.2	14.0
3	3	-2	8.8	7.7	2	6	-1	4.2	5.3
5	3	-2	32.4	33.1	4	6	-1	38.3	37.4
7	3	-2	27.3	27.6	6	6	-1	26.3	26.6
9	3	-2	12.4	13.1	8	6	-1	5.3	5.5
11	3	-2	2.0	4.5	10	6	-1	22.7	22.6
13	3	-2	17.6	17.6	3	7	-1	9.9	11.6
4	4	-2	1.0	0.4	5	7	-1	76.1	75.5
6	4	-2	7.6	8.0	7	7	-1	6.4	6.6
8	4	-2	4.5	4.5	9	7	-1	26.3	24.9
10	4	-2	17.4	17.9	11	7	-1	7.6	8.3
12	4	-2	26.0	24.5	4	8	-1	25.8	26.1
3	5	-2	93.3	102.8	6	8	-1	25.6	26.2
5	5	-2	13.4	13.0	8	8	-1	41.3	42.2
7	5	-2	88.8	92.9					
9	5	-2	16.1	16.7	10	8	-1	5.0	6.0
11	5	-2	37.2	36.4	5	9	-1	44.2	42.4
4	6	-2	15.5	15.4	7	9	-1	54.4	49.1
6	6	-2	59.1	59.9	9	9	-1	8.4	9.3
8	6	-2	9.9	8.5	4	10	-1	6.5	7.6
10	6	-2	11.2	12.7	6	10	-1	6.9	7.6
12	6	-2	18.6	17.6	8	10	-1	7.4	5.7
3	7	-2	7.3	7.7	4	0	0	17.2	19.1
5	7	-2	35.2	35.2	6	0	0	93.6	90.4
7	7	-2	10.4	12.5	8	0	0	74.5	78.7
9	7	-2	21.4	19.6	10	0	0	55.0	58.2
11	7	-2	6.5	6.2	12	0	0	9.6	9.6
6	8	-2	7.7	8.3	3	1	0	91.8	82.2
8	8	-2	10.5	12.8	5	1	0	60.9	61.2
10	8	-2	12.6	12.8	7	1	0	44.4	43.6
5	9	-2	19.1	20.4	9	1	0	1.7	0.8
7	9	-2	17.7	17.0	11	1	0	24.1	25.6
9	9	-2	15.8	15.2	13	1	0	10.1	11.7
6	10	-2	21.7	21.3	4	2	0	30.7	26.8
8	10	-2	13.0	14.2	6	2	0	21.6	20.0
3	1	-1	82.4	91.2	8	2	0	25.7	26.1
5	1	-1	9.2	10.2	10	2	0	4.7	5.0
7	1	-1	43.2	39.6	12	2	0	18.6	18.8
9	1	-1	5.8	5.3	3	3	0	71.9	59.3
11	1	-1	25.0	27.3	5	3	0	41.4	37.9
13	1	-1	3.4	3.8	7	3	0	7.4	7.6
2	2	-1	138.6	143.4	9	3	0	27.1	28.2

11	3	0	15.3	16.6	9	7	1	43.1	42.1
2	4	0	26.7	25.3	4	8	1	26.4	28.4
4	4	0	60.0	56.2	6	8	1	58.6	55.4
6	4	0	31.6	30.5	8	8	1	23.8	24.3
8	4	0	17.9	18.9	3	9	1	10.7	11.6
10	4	0	40.4	40.0	5	9	1	34.8	36.1
12	4	0	22.4	19.6	7	9	1	31.9	28.4
3	5	0	73.2	70.2	4	10	1	1.2	1.1
5	5	0	8.0	8.3	6	10	1	10.7	9.9
7	5	0	116.2	112.5	4	0	2	102.6	114.9
9	5	0	15.0	15.0	6	0	2	3.1	2.0
11	5	0	34.3	36.7	8	0	2	47.1	41.7
2	6	0	18.2	18.3	10	0	2	83.8	82.1
4	6	0	24.5	22.3	3	1	2	28.3	28.3
6	6	0	10.3	6.4	5	1	2	40.5	41.9
8	6	0	22.2	21.5	7	1	2	54.1	51.6
10	6	0	41.7	41.2	9	1	2	22.0	21.1
3	7	0	13.8	13.6	11	1	2	18.3	20.3
5	7	0	50.9	48.4	4	2	2	28.7	29.3
7	7	0	25.5	23.5	6	2	2	38.8	38.1
9	7	0	23.4	21.2	8	2	2	38.4	36.2
2	8	0	17.4	18.2	10	2	2	7.1	8.0
4	8	0	32.8	32.3	3	3	2	4.2	4.9
6	8	0	1.5	1.5	5	3	2	27.5	27.7
8	8	0	1.8	1.1	7	3	2	26.4	24.7
10	8	0	26.9	22.1	9	3	2	13.1	13.1
3	9	0	10.7	11.8	11	3	2	2.1	1.7
5	9	0	23.1	22.6	4	4	2	22.4	24.2
7	9	0	7.0	7.1	6	4	2	1.6	1.0
9	9	0	10.2	10.9	8	4	2	10.7	11.4
4	10	0	48.1	47.0	10	4	2	5.6	6.1
6	10	0	20.7	20.2	3	5	2	106.6	111.2
3	1	1	73.9	79.3	5	5	2	2.0	1.2
5	1	1	1.4	0.9	7	5	2	55.0	57.0
7	1	1	35.0	33.1	9	5	2	15.6	16.6
9	1	1	1.8	3.1	4	6	2	26.5	24.6
11	1	1	30.9	31.9	6	6	2	7.0	6.7
2	2	1	100.4	110.0	8	6	2	17.6	17.0
4	2	1	32.6	30.9	5	7	2	36.8	37.2
6	2	1	68.0	67.1	7	7	2	4.2	4.6
8	2	1	43.4	41.4	9	7	2	17.2	17.0
10	2	1	6.2	6.6	4	8	2	16.9	16.3
12	2	1	43.4	45.4	6	8	2	17.3	18.0
3	3	1	40.0	38.5	8	8	2	3.7	3.2
5	3	1	152.9	157.6	5	9	2	19.1	19.1
7	3	1	10.7	13.2	7	9	2	11.0	10.9
9	3	1	43.4	43.1	5	1	3	14.5	14.0
11	3	1	16.6	17.7	7	1	3	31.9	31.2
2	4	1	22.6	21.5	9	1	3	11.6	11.9
4	4	1	37.0	35.1	6	2	3	58.3	57.6
6	4	1	3.5	2.9	8	2	3	36.0	34.2
8	4	1	1.8	0.7	10	2	3	2.3	2.2
10	4	1	34.7	33.6	5	3	3	79.5	84.1
3	5	1	26.6	26.6	7	3	3	13.7	14.8
5	5	1	10.0	11.4	9	3	3	49.6	49.0
7	5	1	3.7	3.2	6	4	3	10.1	10.6
9	5	1	1.9	2.3	8	4	3	3.4	4.5
11	5	1	8.6	8.6	5	5	3	11.7	12.1
4	6	1	23.6	25.1	7	5	3	4.0	4.8
6	6	1	8.0	8.3	9	5	3	16.3	15.6
8	6	1	23.6	21.5	6	6	3	13.6	14.7
10	6	1	22.9	21.5	8	6	3	6.7	6.6
5	7	1	40.5	41.4	5	7	3	40.0	38.9
7	7	1	11.4	11.4	5	7	3	40.0	38.9

7	7	3	1.8	3.6
6	8	3	39.7	40.3
5	9	3	34.3	33.5
6	2	4	3.0	2.7
5	3	4	19.9	19.5
6	4	4	9.6	10.3
6	6	4	16.3	14.8
5	3	5	43.9	42.9

Table 2

Kanoite

H	K	L	F(OBS)	F(CALC)	H	K	L	F(OBS)	F(CALC)
0	1	-7	16.1	17.4	1	4	-6	3.6	3.2
2	1	-7	1.8 *	1.2	3	4	-6	4.7	3.8
4	1	-7	14.8	16.0	5	4	-6	23.1	24.3
6	1	-7	10.8	10.7	6	4	-6	5.1	4.7
7	1	-7	18.8	18.1	7	4	-6	3.1	3.4
8	1	-7	4.7	5.5	8	4	-6	7.8	8.6
1	2	-7	6.1	7.5	9	4	-6	8.9	9.5
3	2	-7	1.8 *	2.0	10	4	-6	3.9	4.3
5	2	-7	25.2	26.1	0	5	-6	25.8	25.2
6	2	-7	16.3	17.4	2	5	-6	1.9 *	3.4
7	2	-7	1.9 *	1.1	4	5	-6	31.5	32.5
2	3	-7	24.2	25.4	5	5	-6	1.7	1.6
4	3	-7	1.9 *	1.7	6	5	-6	18.9	18.3
6	3	-7	29.0	29.3	7	5	-6	34.0	33.1
7	3	-7	12.8	13.0	8	5	-6	1.9 *	1.4
3	4	-7	11.0	10.8	9	5	-6	1.9	1.9
5	4	-7	11.7	10.9	1	6	-6	13.2	13.1
1	0	-6	14.6	13.5	3	6	-6	35.2	34.0
3	0	-6	39.0	38.7	5	6	-6	1.9 *	1.9
5	0	-6	18.4	19.2	6	6	-6	10.4	9.0
6	0	-6	18.6	18.3	7	6	-6	20.3	19.7
7	0	-6	35.5	35.7	2	7	-6	17.7	18.0
8	0	-6	3.6	2.9	4	7	-6	4.5	2.6
9	0	-6	4.8	5.2	6	7	-6	8.7	9.1
10	0	-6	48.3	44.2	0	1	-5	24.0	25.3
11	0	-6	33.6	34.5	2	1	-5	1.6 *	3.4
0	1	-6	9.2	10.0	4	1	-5	15.9	16.9
2	1	-6	1.7 *	2.1	5	1	-5	4.2	4.9
4	1	-6	17.2	18.2	6	1	-5	13.1	13.9
5	1	-6	10.9	9.5	7	1	-5	36.2	35.0
6	1	-6	9.7	9.9	8	1	-5	8.6	9.3
7	1	-6	24.3	21.0	9	1	-5	1.7	1.3
8	1	-6	1.8 *	2.1	10	1	-5	18.8	18.4
9	1	-6	10.4	10.5	11	1	-5	9.4	7.9
10	1	-6	21.5	21.4	12	1	-5	5.9	1.5
1	2	-6	14.7	14.7	1	2	-5	20.9	21.2
3	2	-6	17.3	18.4	3	2	-5	1.6 *	3.1
5	2	-6	12.4	12.2	5	2	-5	24.3	24.1
6	2	-6	12.8	11.3	6	2	-5	27.4	25.7
7	2	-6	1.7 *	0.9	7	2	-5	5.2	1.9
8	2	-6	9.2	9.6	8	2	-5	38.7	37.7
9	2	-6	25.7	26.8	9	2	-5	29.4	29.8
10	2	-6	4.3	4.6	10	2	-5	1.8	2.5
11	2	-6	6.6	6.9	11	2	-5	2.0 *	2.2
0	3	-6	4.2	1.6	12	2	-5	27.1	27.0
2	3	-6	14.4	14.5	0	3	-5	14.2	13.3
4	3	-6	5.1	2.8	2	3	-5	42.1	42.4
5	3	-6	7.6	7.7	4	3	-5	1.6 *	2.3
6	3	-6	1.7 *	3.2	5	3	-5	45.2	44.4
7	3	-6	3.5	0.7	6	3	-5	22.5	22.5
8	3	-6	10.4	11.1	7	3	-5	15.5	14.3
9	3	-6	5.2	5.4	8	3	-5	39.1	38.1
10	3	-6	7.0	6.2	9	3	-5	66.1	66.0

10	3	-5	9.0	7.4	12	0	-4	19.2	19.5
11	3	-5	7.3	7.1	13	0	-4	22.3	20.5
12	3	-5	26.7	25.6	0	1	-4	26.6	27.3
1	4	-5	1.6 *	2.5	2	1	-4	28.3	30.7
3	4	-5	17.5	17.8	4	1	-4	15.7	15.9
5	4	-5	5.7	5.1	5	1	-4	12.4	13.7
6	4	-5	1.6	3.5	6	1	-4	22.3	22.2
7	4	-5	13.4	13.4	7	1	-4	39.8	41.1
8	4	-5	10.8	11.1	8	1	-4	11.5	11.7
9	4	-5	10.2	9.8	9	1	-4	13.8	14.3
11	4	-5	12.0	11.8	10	1	-4	1.9 *	3.7
0	5	-5	19.8	20.7	11	1	-4	12.2	12.3
2	5	-5	4.9	5.4	12	1	-4	2.1 *	3.6
4	5	-5	9.6	9.4	13	1	-4	14.9	14.3
5	5	-5	6.1	5.3	1	2	-4	8.5	8.5
6	5	-5	11.0	10.6	3	2	-4	3.3	3.9
7	5	-5	28.1	25.7	4	2	-4	25.6	24.0
8	5	-5	11.6	11.9	5	2	-4	32.7	35.0
9	5	-5	3.5	2.9	6	2	-4	20.0	19.7
10	5	-5	10.3	10.1	7	2	-4	13.2	12.8
11	5	-5	6.8	7.2	8	2	-4	20.9	21.3
1	6	-5	8.6	7.5	9	2	-4	9.6	10.2
3	6	-5	10.2	9.7	10	2	-4	6.5	5.9
5	6	-5	1.7 *	1.8	11	2	-4	8.4	9.0
6	6	-5	15.6	15.5	12	2	-4	25.9	23.7
7	6	-5	13.3	13.7	13	2	-4	16.7	14.6
8	6	-5	1.7	1.2	0	3	-4	12.7	12.7
9	6	-5	4.6	5.6	2	3	-4	4.4	5.3
10	6	-5	5.0	5.9	4	3	-4	1.5 *	0.5
0	7	-5	9.6	9.4	5	3	-4	7.9	7.2
2	7	-5	7.7	8.5	6	3	-4	17.3	17.7
4	7	-5	8.8	9.3	7	3	-4	1.5	1.3
5	7	-5	25.7	25.8	8	3	-4	6.2	6.1
6	7	-5	1.8 *	1.6	9	3	-4	14.6	15.0
7	7	-5	15.1	16.2	10	3	-4	4.8	5.1
8	7	-5	6.8	6.1	11	3	-4	2.8	3.6
9	7	-5	5.7	6.5	12	3	-4	11.0	10.8
1	8	-5	19.8	19.8	1	4	-4	8.1	8.0
3	8	-5	8.1	7.9	3	4	-4	10.0	11.4
5	8	-5	25.5	24.7	4	4	-4	2.9	1.7
7	8	-5	1.9 *	1.8	5	4	-4	16.2	16.2
2	9	-5	17.2	16.9	6	4	-4	22.4	20.0
4	9	-5	9.5	9.9	7	4	-4	10.6	11.1
1	0	-4	11.6	11.8	8	4	-4	8.6	9.0
3	0	-4	59.2	60.7	9	4	-4	23.1	23.4
4	0	-4	103.1	111.6	10	4	-4	12.0	12.9
5	0	-4	13.3	12.9	11	4	-4	8.0	7.9
6	0	-4	85.1	82.8	12	4	-4	30.3	27.8
7	0	-4	39.5	39.9	0	5	-4	20.8	20.7
8	0	-4	6.7	5.3	2	5	-4	3.2	3.5
9	0	-4	9.4	9.8	4	5	-4	36.2	34.7
10	0	-4	43.1	43.0	5	5	-4	22.3	22.8
11	0	-4	26.2	25.1	6	5	-4	15.9	15.5

7	5	-4	62.3	64.4	13	1	-3	7.5	8.0
8	5	-4	5.2	5.4	1	2	-3	18.8	18.1
9	5	-4	8.5	9.0	3	2	-3	12.6	12.7
10	5	-4	29.4	27.7	4	2	-3	8.1	7.9
11	5	-4	27.6	27.9	5	2	-3	24.3	25.3
12	5	-4	2.2 *	2.0	6	2	-3	12.3	11.4
1	6	-4	3.9	3.9	7	2	-3	14.0	14.4
3	6	-4	20.6	19.7	8	2	-3	49.9	50.8
4	6	-4	68.9	67.4	9	2	-3	26.4	26.6
5	6	-4	11.4	11.2	10	2	-3	8.8	8.1
6	6	-4	38.1	38.0	11	2	-3	12.7	11.1
7	6	-4	34.7	34.6	12	2	-3	43.5	41.4
8	6	-4	1.6	1.8	13	2	-3	2.2 *	1.3
9	6	-4	10.2	9.8	0	3	-3	17.1	16.6
10	6	-4	33.8	31.7	2	3	-3	51.4	52.3
11	6	-4	12.9	12.6	3	3	-3	49.9	52.2
0	7	-4	5.7	5.4	4	3	-3	5.7	5.0
2	7	-4	15.8	15.6	5	3	-3	77.3	79.0
4	7	-4	6.2	5.3	6	3	-3	16.7	16.7
5	7	-4	21.0	20.4	7	3	-3	6.1	7.9
6	7	-4	13.3	13.7	8	3	-3	32.0	32.4
7	7	-4	7.8	9.2	9	3	-3	85.2	85.1
8	7	-4	16.7	16.0	10	3	-3	6.1	6.9
9	7	-4	30.0	30.4	11	3	-3	39.7	38.6
10	7	-4	2.0 *	2.4	12	3	-3	32.9	29.5
1	8	-4	3.2	1.1	13	3	-3	5.1	7.1
3	8	-4	9.7	9.6	1	4	-3	1.4 *	2.1
5	8	-4	10.8	8.9	3	4	-3	2.6	4.1
6	8	-4	15.1	15.8	4	4	-3	26.1	28.4
7	8	-4	1.8 *	2.2	5	4	-3	4.2	3.7
8	8	-4	1.6	1.0	6	4	-3	22.6	23.5
9	8	-4	7.8	8.1	7	4	-3	26.8	25.6
0	9	-4	1.8 *	0.5	8	4	-3	13.8	15.6
2	9	-4	8.0	8.6	9	4	-3	11.7	10.4
4	9	-4	7.4	7.3	10	4	-3	12.6	13.1
6	9	-4	5.7	5.3	11	4	-3	4.4	3.3
7	9	-4	1.6	3.5	12	4	-3	14.9	15.8
8	9	-4	10.1	10.2	0	5	-3	4.9	6.0
1	10	-4	2.0 *	1.7	2	5	-3	10.5	11.0
3	10	-4	10.8	10.1	4	5	-3	19.4	20.0
5	10	-4	5.3	3.9	5	5	-3	6.9	7.5
0	1	-3	17.5	18.7	6	5	-3	1.6 *	3.0
2	1	-3	8.9	9.3	7	5	-3	24.9	25.5
3	1	-3	67.9	62.3	8	5	-3	5.8	7.1
4	1	-3	21.4	22.3	9	5	-3	22.5	21.9
5	1	-3	12.0	13.1	10	5	-3	15.6	15.5
6	1	-3	12.9	13.4	11	5	-3	13.2	13.6
7	1	-3	42.0	44.9	12	5	-3	2.2 *	2.3
8	1	-3	8.0	8.1	1	6	-3	1.5 *	1.9
9	1	-3	12.3	12.9	3	6	-3	21.3	21.3
10	1	-3	20.0	20.0	4	6	-3	22.7	20.5
11	1	-3	16.0	16.3	5	6	-3	3.9	4.7
12	1	-3	2.1 *	1.9	6	6	-3	6.7	7.0

7	6	-3	4.2	4.5	6	1	-2	5.1	4.1
8	6	-3	9.9	11.8	7	1	-2	94.2	93.1
9	6	-3	8.6	8.1	8	1	-2	4.6	4.7
10	6	-3	17.6	18.4	9	1	-2	25.8	24.9
11	6	-3	11.0	10.2	10	1	-2	16.8	15.8
0	7	-3	17.2	17.9	11	1	-2	2.0	0.1
2	7	-3	9.7	9.7	12	1	-2	15.0	13.5
4	7	-3	1.6 *	0.4	13	1	-2	22.9	24.6
5	7	-3	25.6	25.8	1	2	-2	3.8	4.6
6	7	-3	9.2	9.2	2	2	-2	29.7	33.0
7	7	-3	25.1	25.7	3	2	-2	23.6	25.5
8	7	-3	4.9	2.2	4	2	-2	7.4	8.0
9	7	-3	16.2	17.8	5	2	-2	17.3	18.9
10	7	-3	4.2	4.5	6	2	-2	70.5	68.0
11	7	-3	2.0	2.1	7	2	-2	4.5	4.5
1	8	-3	21.1	21.0	8	2	-2	38.1	38.0
3	8	-3	5.2	4.9	9	2	-2	20.7	21.4
5	8	-3	25.9	25.9	10	2	-2	15.1	14.6
6	8	-3	29.5	30.5	11	2	-2	14.2	13.4
7	8	-3	1.8 *	1.4	12	2	-2	34.6	34.2
8	8	-3	43.7	43.9	13	2	-2	2.1 *	2.0
9	8	-3	21.6	21.3	0	3	-2	9.6	9.9
10	8	-3	11.5	11.7	2	3	-2	13.6	13.8
0	9	-3	6.1	6.2	3	3	-2	14.1	13.8
2	9	-3	25.0	24.2	4	3	-2	12.2	13.1
4	9	-3	1.7 *	0.2	5	3	-2	29.0	28.2
5	9	-3	23.8	22.5	6	3	-2	4.6	4.8
6	9	-3	4.0	3.5	7	3	-2	16.5	17.5
7	9	-3	22.7	22.8	8	3	-2	6.1	5.9
8	9	-3	11.1	10.8	9	3	-2	3.6	2.7
9	9	-3	46.7	45.6	10	3	-2	9.8	9.0
1	10	-3	5.6	4.4	11	3	-2	2.0	1.8
3	10	-3	15.4	15.5	12	3	-2	4.9	4.0
5	10	-3	4.5	3.2	13	3	-2	9.6	11.4
6	10	-3	14.3	15.0	1	4	-2	14.3	14.8
7	10	-3	11.6	10.8	3	4	-2	10.1	10.3
1	0	-2	18.7	19.0	4	4	-2	7.9	8.6
3	0	-2	2.3	2.7	5	4	-2	16.8	17.5
4	0	-2	114.0	120.5	6	4	-2	8.8	9.4
5	0	-2	16.1	15.8	7	4	-2	4.7	4.3
6	0	-2	99.8	106.0	8	4	-2	23.8	24.3
7	0	-2	55.6	56.5	9	4	-2	9.9	10.3
8	0	-2	47.8	48.3	10	4	-2	7.6	8.6
9	0	-2	1.9 *	1.4	11	4	-2	4.5	4.1
10	0	-2	74.0	70.1	12	4	-2	24.7	23.9
11	0	-2	11.2	10.0	13	4	-2	5.7	5.1
12	0	-2	7.8	7.4	0	5	-2	34.5	36.0
13	0	-2	22.9	21.9	2	5	-2	1.5 *	1.9
0	1	-2	3.3	2.4	3	5	-2	83.9	85.4
2	1	-2	3.4	4.4	4	5	-2	8.0	6.8
3	1	-2	6.2	3.8	5	5	-2	8.1	6.4
4	1	-2	18.3	19.2	6	5	-2	22.5	22.8
5	1	-2	14.6	17.0	7	5	-2	87.2	92.6

8	5	-2	13.5	13.3	6	1	-1	15.7	15.6
9	5	-2	14.6	15.4	7	1	-1	47.2	46.0
10	5	-2	15.5	14.4	8	1	-1	8.5	9.2
11	5	-2	24.0	23.8	9	1	-1	9.4	9.1
12	5	-2	5.9	5.0	10	1	-1	10.0	10.2
1	6	-2	2.9	2.0	11	1	-1	24.3	26.1
3	6	-2	17.8	17.9	12	1	-1	2.0 *	1.0
4	6	-2	49.2	52.2	13	1	-1	14.0	15.4
5	6	-2	4.6	5.6	2	2	-1	136.2	139.8
6	6	-2	78.5	78.9	3	2	-1	4.4	5.6
7	6	-2	22.5	22.3	4	2	-1	53.3	54.1
8	6	-2	22.7	22.0	5	2	-1	20.3	20.4
9	6	-2	4.0	0.4	6	2	-1	32.4	32.8
10	6	-2	31.0	29.9	7	2	-1	1.8 *	1.9
11	6	-2	10.2	10.3	8	2	-1	39.8	39.4
12	6	-2	6.4	6.0	9	2	-1	8.1	7.7
0	7	-2	4.9	4.2	10	2	-1	2.6	4.4
2	7	-2	13.4	13.9	11	2	-1	4.1	4.5
3	7	-2	1.0	1.4	12	2	-1	58.5	59.1
4	7	-2	6.7	6.4	13	2	-1	5.4	4.7
5	7	-2	45.6	48.7	3	3	-1	120.1	123.3
6	7	-2	6.0	5.0	4	3	-1	23.6	23.9
7	7	-2	11.7	14.1	5	3	-1	138.5	142.4
8	7	-2	7.6	6.8	6	3	-1	4.8	3.7
9	7	-2	21.5	22.1	7	3	-1	25.6	27.9
10	7	-2	4.7	5.4	8	3	-1	13.6	12.1
11	7	-2	11.9	12.1	9	3	-1	73.0	73.4
1	8	-2	6.5	6.4	10	3	-1	6.2	6.2
3	8	-2	1.6 *	1.9	11	3	-1	52.9	53.5
4	8	-2	1.1	6.7	12	3	-1	19.1	20.1
5	8	-2	1.8 *	1.3	13	3	-1	18.8	20.7
6	8	-2	14.0	14.3	2	4	-1	34.3	37.8
7	8	-2	4.1	4.1	3	4	-1	18.5	18.6
8	8	-2	15.9	16.6	4	4	-1	10.6	10.8
9	8	-2	7.5	7.0	5	4	-1	1.7 *	1.3
10	8	-2	1.9	0.6	6	4	-1	9.5	9.3
0	9	-2	6.2	6.3	7	4	-1	8.4	6.6
2	9	-2	11.9	12.0	8	4	-1	1.7	1.4
4	9	-2	1.8 *	1.8	9	4	-1	4.4	1.4
5	9	-2	21.8	22.6	10	4	-1	28.0	29.1
6	9	-2	1.9 *	1.9	11	4	-1	4.1	6.6
7	9	-2	1.5	1.4	12	4	-1	29.4	29.0
8	9	-2	14.9	16.4	0	5	-1	20.3	21.2
9	9	-2	21.2	19.9	2	5	-1	1.4 *	1.8
1	10	-2	5.5	5.9	3	5	-1	55.6	57.8
3	10	-2	6.4	6.7	4	5	-1	1.7 *	2.9
5	10	-2	10.3	11.0	5	5	-1	16.8	18.2
6	10	-2	5.7	5.8	6	5	-1	13.3	13.5
7	10	-2	14.2	13.2	7	5	-1	27.2	27.5
8	10	-2	3.3	3.0	8	5	-1	11.2	9.9
3	1	-1	93.1	99.5	9	5	-1	8.4	9.5
4	1	-1	5.8	6.9	10	5	-1	2.1 *	0.4
5	1	-1	4.3	4.4	11	5	-1	22.5	23.0

12	5	-1	2.1 *	1.7	10	0	0	70.7	72.7
1	6	-1	5.8	4.7	11	0	0	8.4	9.1
2	6	-1	4.7	3.8	12	0	0	11.6	12.5
3	6	-1	5.6	5.7	13	0	0	8.1	7.2
4	6	-1	27.3	27.7	3	1	0	97.4	91.9
5	6	-1	6.7	6.1	4	1	0	1.6 *	1.0
6	6	-1	23.6	23.1	5	1	0	51.3	53.8
7	6	-1	17.5	16.7	6	1	0	3.8	0.1
8	6	-1	7.3	6.9	7	1	0	45.3	46.5
9	6	-1	2.0 *	0.5	8	1	0	4.8	1.4
10	6	-1	15.4	15.9	9	1	0	6.7	7.4
11	6	-1	5.5	0.9	10	1	0	3.4	4.4
0	7	-1	7.1	8.6	11	1	0	17.0	17.3
2	7	-1	1.5 *	3.0	12	1	0	8.7	7.7
3	7	-1	32.1	34.5	13	1	0	2.1	2.3
4	7	-1	10.9	9.4	3	2	0	7.0	6.5
5	7	-1	40.0	39.9	4	2	0	47.7	44.5
6	7	-1	3.4	3.7	5	2	0	9.3	8.6
7	7	-1	20.7	21.0	6	2	0	22.3	22.8
8	7	-1	1.9 *	3.3	7	2	0	1.8 *	0.5
9	7	-1	9.7	9.0	8	2	0	44.2	41.9
10	7	-1	14.1	12.4	9	2	0	5.1	6.9
11	7	-1	5.5	5.1	10	2	0	12.0	13.5
1	8	-1	1.5 *	1.2	11	2	0	5.8	7.1
3	8	-1	13.8	14.2	12	2	0	25.1	23.7
4	8	-1	44.8	44.5	3	3	0	51.8	45.1
5	8	-1	18.8	19.0	4	3	0	1.8 *	1.6
6	8	-1	31.9	30.9	5	3	0	26.8	25.9
7	8	-1	8.1	8.2	6	3	0	3.6	1.6
8	8	-1	45.6	44.3	7	3	0	11.2	12.3
9	8	-1	12.8	13.0	8	3	0	5.0	6.1
10	8	-1	10.8	11.8	9	3	0	17.9	18.0
0	9	-1	5.2	5.9	10	3	0	1.9 *	3.2
2	9	-1	6.4	5.8	11	3	0	12.7	13.9
4	9	-1	6.3	5.5	12	3	0	2.0 *	2.4
5	9	-1	61.3	59.7	2	4	0	51.7	51.9
6	9	-1	6.3	6.6	3	4	0	1.8 *	0.1
7	9	-1	32.8	30.1	4	4	0	30.2	27.5
8	9	-1	4.8	5.6	5	4	0	13.9	13.4
9	9	-1	24.1	23.8	6	4	0	33.2	32.3
3	10	-1	3.1	3.0	7	4	0	1.9 *	2.2
4	10	-1	24.1	24.0	8	4	0	41.3	41.3
5	10	-1	4.9	4.6	9	4	0	1.9 *	2.2
6	10	-1	24.1	23.8	10	4	0	25.7	25.4
7	10	-1	17.4	15.0	11	4	0	7.7	8.2
8	10	-1	9.9	10.0	12	4	0	24.0	22.7
3	0	0	11.6	9.0	2	5	0	1.7 *	1.7
4	0	0	18.4	20.1	3	5	0	70.9	70.0
5	0	0	1.7 *	1.1	4	5	0	7.1	5.7
6	0	0	104.9	107.1	5	5	0	13.2	15.6
7	0	0	11.3	12.3	6	5	0	4.8	5.8
8	0	0	74.1	79.8	7	5	0	107.9	107.5
9	0	0	3.6	4.3	8	5	0	4.7	0.3

9	5	0	22.3	22.5	11	1	1	21.7	22.0
10	5	0	11.9	11.1	12	1	1	2.0 *	1.6
11	5	0	18.7	20.8	1	2	1	10.2	11.1
2	6	0	14.4	12.7	2	2	1	91.3	92.4
3	6	0	4.6	5.8	3	2	1	5.3	5.6
4	6	0	44.3	42.3	4	2	1	41.3	41.4
5	6	0	6.7	7.1	5	2	1	1.7 *	1.4
6	6	0	41.5	38.6	6	2	1	45.6	46.0
7	6	0	8.8	8.2	7	2	1	6.2	5.6
8	6	0	32.4	33.0	8	2	1	49.4	47.5
9	6	0	4.5	3.8	9	2	1	1.9 *	1.8
10	6	0	62.8	63.0	10	2	1	18.2	16.6
11	6	0	2.1 *	2.3	11	2	1	2.0 *	2.2
2	7	0	15.2	15.0	12	2	1	44.2	45.9
3	7	0	12.1	12.6	2	3	1	8.7	9.3
4	7	0	4.9	2.6	3	3	1	48.4	47.2
5	7	0	60.0	59.0	4	3	1	17.0	17.0
6	7	0	2.0 *	1.9	5	3	1	175.1	179.4
7	7	0	20.9	19.1	6	3	1	1.8 *	3.2
8	7	0	8.7	8.6	7	3	1	8.2	6.2
9	7	0	23.6	22.7	8	3	1	5.3	7.1
10	7	0	5.3	3.6	9	3	1	40.4	39.8
2	8	0	19.6	20.5	10	3	1	2.1 *	5.1
3	8	0	1.8 *	1.2	11	3	1	35.7	36.8
4	8	0	1.7	3.3	1	4	1	9.6	9.6
5	8	0	8.6	9.1	2	4	1	23.8	25.2
6	8	0	16.9	17.0	3	4	1	15.9	17.1
7	8	0	2.0 *	2.7	4	4	1	18.2	18.0
8	8	0	24.8	24.1	5	4	1	1.7 *	1.7
9	8	0	4.2	3.6	6	4	1	4.4	4.7
10	8	0	2.0	2.6	7	4	1	12.5	12.8
2	9	0	3.8	3.7	8	4	1	13.5	12.8
3	9	0	5.0	4.8	9	4	1	2.0 *	1.2
4	9	0	7.6	7.6	10	4	1	34.1	34.0
5	9	0	28.5	28.3	11	4	1	2.1 *	1.5
6	9	0	2.1 *	2.9	2	5	1	2.7	2.8
7	9	0	3.4	4.4	3	5	1	47.2	52.8
8	9	0	2.1 *	1.5	4	5	1	8.1	8.0
9	9	0	17.6	17.2	5	5	1	14.5	15.7
3	10	0	1.9 *	0.2	6	5	1	8.6	9.8
4	10	0	25.9	24.8	7	5	1	29.9	29.9
5	10	0	4.8	2.8	8	5	1	2.0 *	1.1
6	10	0	10.3	10.4	9	5	1	8.8	9.1
7	10	0	5.9	2.8	10	5	1	10.1	8.3
2	1	1	2.8	3.7	11	5	1	14.9	16.3
3	1	1	79.6	83.6	1	6	1	12.8	13.9
4	1	1	1.5 *	1.7	3	6	1	8.2	9.3
5	1	1	11.6	12.2	4	6	1	19.8	20.4
6	1	1	1.8 *	1.4	5	6	1	1.7 *	3.6
7	1	1	46.7	45.4	6	6	1	15.6	15.4
8	1	1	6.8	5.7	7	6	1	1.9 *	4.3
9	1	1	4.2	4.1	8	6	1	13.1	13.2
10	1	1	7.3	7.3	9	6	1	5.7	5.9

10	6	1	17.5	17.3	6	2	2	26.1	24.8
2	7	1	4.0	2.3	7	2	2	7.5	7.1
3	7	1	27.0	29.0	8	2	2	52.2	49.7
4	7	1	12.8	12.5	9	2	2	5.6	4.5
5	7	1	23.0	23.8	10	2	2	2.1	1.8
6	7	1	6.1	6.8	11	2	2	2.2 *	3.1
7	7	1	16.4	18.3	2	3	2	4.4	3.5
8	7	1	4.5	5.6	3	3	2	3.5	3.6
9	7	1	16.5	17.1	4	3	2	6.3	6.8
10	7	1	2.1 *	2.2	5	3	2	10.9	10.5
1	8	1	3.5	3.2	6	3	2	3.7	2.6
3	8	1	12.9	13.3	7	3	2	16.6	15.5
4	8	1	44.0	45.8	8	3	2	5.9	4.0
5	8	1	2.0 *	2.4	9	3	2	10.3	10.6
6	8	1	49.0	49.1	10	3	2	2.1 *	2.5
7	8	1	9.6	9.2	11	3	2	2.2	1.4
8	8	1	42.6	42.4	1	4	2	14.9	15.5
9	8	1	2.1 *	1.5	3	4	2	7.5	7.6
2	9	1	1.6 *	0.2	4	4	2	12.6	11.9
4	9	1	4.7	3.9	5	4	2	1.6 *	1.4
5	9	1	65.4	69.0	6	4	2	4.6	3.7
6	9	1	6.3	6.8	7	4	2	3.2	2.7
7	9	1	10.3	11.7	8	4	2	26.4	23.7
8	9	1	2.1 *	2.9	9	4	2	2.1 *	2.3
1	10	1	6.6	5.9	10	4	2	2.2	2.2
3	10	1	1.8 *	0.4	2	5	2	4.6	1.2
4	10	1	21.6	21.5	3	5	2	100.5	109.6
5	10	1	2.0 *	2.8	4	5	2	1.5 *	1.8
6	10	1	16.2	17.2	5	5	2	4.6	4.9
7	10	1	2.1 *	1.7	6	5	2	7.3	8.0
1	0	2	46.1	45.5	7	5	2	53.4	53.1
3	0	2	14.7	14.3	8	5	2	5.3	4.1
4	0	2	96.8	107.2	9	5	2	20.2	20.6
5	0	2	8.4	9.9	10	5	2	2.2 *	1.8
7	0	2	14.5	14.7	1	6	2	11.8	11.1
8	0	2	22.9	23.1	3	6	2	22.0	22.0
9	0	2	7.4	6.6	4	6	2	38.0	37.4
10	0	2	95.9	96.5	5	6	2	4.9	5.2
11	0	2	3.8	3.3	6	6	2	18.2	18.3
2	1	2	1.3 *	0.8	7	6	2	1.9 *	1.2
3	1	2	52.7	52.3	8	6	2	20.0	20.3
4	1	2	16.8	17.7	9	6	2	6.7	8.0
5	1	2	54.7	53.4	2	7	2	8.1	8.8
6	1	2	1.7 *	1.5	4	7	2	1.6 *	1.4
7	1	2	52.5	51.9	5	7	2	42.6	43.5
8	1	2	5.3	4.6	6	7	2	3.6	4.2
9	1	2	2.1	0.4	7	7	2	2.5	2.0
10	1	2	6.6	7.0	8	7	2	2.0 *	3.2
11	1	2	6.9	5.3	9	7	2	19.2	19.7
1	2	2	3.6	3.4	1	8	2	6.2	6.6
3	2	2	12.6	13.7	3	8	2	3.0	2.5
4	2	2	2.5	3.2	4	8	2	7.4	9.4
5	2	2	1.7 *	4.3	5	8	2	5.1	4.1

6	8	2	5.6	5.0	2	7	3	7.4	8.9
7	8	2	2.0 *	3.5	4	7	3	1.6 *	2.3
8	8	2	13.3	14.1	5	7	3	25.5	24.9
2	9	2	1.6 *	1.4	6	7	3	6.1	5.4
4	9	2	1.9 *	3.7	7	7	3	18.4	20.7
6	9	2	6.0	6.9	1	8	3	16.3	16.0
7	9	2	4.4	1.4	3	8	3	4.0	2.5
1	10	2	1.8 *	1.3	4	8	3	13.7	14.8
3	10	2	1.8 *	1.8	5	8	3	13.7	13.8
5	10	2	5.3	4.1	6	8	3	35.6	35.6
2	1	3	1.4 *	2.0	2	9	3	6.0	4.8
4	1	3	9.2	10.3	4	9	3	5.4	6.0
5	1	3	9.5	8.9	5	9	3	53.3	50.8
6	1	3	6.1	7.5	1	10	3	3.9	3.0
7	1	3	37.2	38.1	3	10	3	13.2	13.4
8	1	3	2.0 *	1.7	1	0	4	1.2	1.1
9	1	3	2.3	2.1	3	0	4	49.4	48.0
10	1	3	2.2 *	0.7	5	0	4	12.9	12.7
1	2	3	9.5	8.8	7	0	4	4.3	3.9
3	2	3	1.5 *	1.3	2	1	4	3.1	3.7
5	2	3	16.8	16.7	4	1	4	1.7 *	1.5
6	2	3	31.9	32.1	6	1	4	3.9	4.8
7	2	3	1.8 *	1.3	8	1	4	6.4	4.6
8	2	3	45.4	44.4	1	2	4	28.4	30.0
9	2	3	2.2 *	6.2	3	2	4	4.5	3.8
10	2	3	12.2	11.8	5	2	4	1.7 *	2.2
2	3	3	14.8	14.3	6	2	4	11.3	9.6
4	3	3	4.7	3.8	7	2	4	3.4	4.8
5	3	3	101.2	100.9	2	3	4	11.2	11.2
6	3	3	19.1	18.9	4	3	4	8.4	9.2
7	3	3	30.7	30.8	5	3	4	18.1	17.9
8	3	3	14.2	12.4	6	3	4	1.8 *	2.0
9	3	3	41.4	41.1	8	3	4	7.9	7.5
1	4	3	3.3	2.3	1	4	4	1.5 *	0.9
3	4	3	6.0	5.6	3	4	4	5.5	5.9
5	4	3	7.4	6.4	5	4	4	13.2	13.5
6	4	3	2.4	2.1	6	4	4	1.8	1.1
7	4	3	4.6	5.9	7	4	4	11.3	10.8
8	4	3	10.4	11.3	2	5	4	4.6	4.5
9	4	3	2.1 *	4.2	4	5	4	24.1	23.0
2	5	3	3.9	3.0	6	5	4	7.2	7.0
4	5	3	10.9	10.9	1	6	4	12.1	12.1
5	5	3	19.2	19.8	3	6	4	26.3	25.2
6	5	3	8.9	6.1	5	6	4	1.8 *	1.8
7	5	3	24.1	24.2	6	6	4	21.9	21.8
8	5	3	2.1 *	1.8	2	7	4	10.9	11.0
9	5	3	2.2	2.7	4	7	4	1.8 *	2.6
1	6	3	1.5 *	1.5	1	8	4	5.9	5.5
3	6	3	11.6	11.4	3	8	4	8.4	7.6
5	6	3	1.8 *	2.7	2	9	4	11.2	10.2
6	6	3	14.0	14.3	1	10	4	1.9 *	1.5
7	6	3	2.0 *	3.6	2	1	5	1.6 *	0.9
8	6	3	2.8	3.8	4	1	5	5.7	5.3

6	1	5	9.9	9.5
1	2	5	21.7	21.0
3	2	5	5.9	5.8
5	2	5	15.8	15.8
2	3	5	29.7	29.0
4	3	5	5.8	5.0
5	3	5	51.4	48.9
6	3	5	9.9	9.3
1	4	5	7.1	7.6
3	4	5	13.5	14.6
5	4	5	5.9	5.0
2	5	5	4.2	3.2
4	5	5	1.9 *	1.1
1	6	5	5.9	6.0
3	6	5	3.8	2.6
2	7	5	6.0	5.8
1	8	5	20.0	18.3
1	0	6	12.2	12.9
3	0	6	35.8	31.6
2	1	6	13.9	13.8
4	1	6	13.8	14.3
1	2	6	1.7 *	2.3
3	2	6	6.9	6.3
2	3	6	1.8 *	0.9
1	4	6	15.0	13.6
3	4	6	1.9 *	0.6
2	5	6	7.6	6.9
1	6	6	6.8	5.9