

The crystal structure of paulmooreite, $Pb_2[As_2O_5]$: dimeric arsenite groups

TAKAHARU ARAKI, PAUL B. MOORE

*Department of the Geophysical Sciences, The University of Chicago
Chicago, Illinois 60637*

AND GEORGE D. BRUNTON

*Division of Reactor Chemistry, Oak Ridge National Laboratory
Oak Ridge, Tennessee 37830***Abstract**

Paulmooreite, $Pb_2[As_2O_5]$, was studied in detail by three-dimensional X-ray diffractometry on a Picker four-circle goniostat using $MoK\alpha$ radiation. The new mineral is monoclinic, space group $P2_1$ or $P2_1/m$ including exceedingly weak reflections but refined in $P2_1/a$, $Z = 4$, $a = 13.584(4)$, $b = 5.650(2)$, $c = 8.551(3) \text{ \AA}$, $\beta = 108.78(2)^\circ$. $R = 0.064$ ($R_w = 0.057$) for 2709 independent reflections. The structure was solved by Patterson, Fourier and least-squares refinement techniques.

The structure is based on $[As_2O_5]^{4-}$ corner-linked dimers which link to distorted Pb-O polyhedra, leading to the weakest links across $\{001\}$, the plane of perfect cleavage. For $^{207}Pb^{(1)}As_2O_5$, bond distance averages are As(1)-O = 1.774, As(2)-O = 1.782, Pb(1)-O = 2.380, and Pb(2)-O = 2.436 \AA. The $[AsO_3]^{3-}$ groups are trigonal pyramids, and PbO_4 groups are distorted tetragonal pyramids. For bonds $< 3.8 \text{ \AA}$, distorted Pb(1)O₃ and Pb(2)O₃ polyhedra occur. Due to lone-pair electrons about the cations, the coordination polyhedra are "one-sided," the electron pairs presumably residing around the empty vertices.

Introduction

About a decade ago, an unknown mineral from Långban, Sweden was investigated in a cursory fashion and subsequently reported as likely being a new species, corresponding to Flink unknown 49 (Moore *et al.*, 1971). Later study revealed the mineral to be the same as Flink unknown 305. A more detailed examination led to an electron microprobe study which revealed only lead and arsenic in the atomic ratio 1:1. Owing to the extreme rarity of the mineral we despaired of obtaining a more detailed wet-chemical analysis, especially for water and elements with atomic number less than 9, so we undertook a formal three-dimensional crystal structure analysis. Shortly after the structure was solved, the species was announced as the new mineral paulmooreite, $Pb_2As_2O_5$, by Dunn *et al.*, 1979. These authors also noted its occurrence on Flink unknown 305, a specimen from which our crystal was taken for structure analysis (Riksmuseet Stockholm No. 252356) before it was submitted to their study and recatalogued (NMNH # 142974). Thus, by a remarkable coincidence, the new

species and the structure were determined independently almost simultaneously.

Experimental section

Single crystals of the type specimen were examined and a suitable fragment was ground into an ellipsoid which measured $0.059 \times 0.13 \times 0.10 \text{ mm}$ along its principal axes. Least-squares refinement employing 20 high-angle $MoK\alpha$, reflections from a Picker four-circle goniostat with a Kevex Si-Li solid-state detector led to determination of the cell parameters $a = 13.584(4)$, $b = 5.650(2)$ and $c = 8.551(3) \text{ \AA}$, $\beta = 108.78(2)^\circ$.

Three-dimensional data were collected with unfiltered $MoK\alpha$ radiation, $MoK\beta$ being eliminated by a 400V wide pulse-height analyzer window. Reflections were step-scanned in increments of 0.02° in 2θ over a range of $2\theta = (3.3 \times 114.6 \Delta\lambda/\lambda)^\circ$. Each step was counted for one second, and background was counted on each side of a reflection for fifteen seconds. The variance whose reciprocal was used in least-squares adjustment of structure parameters was

H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
2	0	0	154.8	179.2	-12	0	6	272.9	275.3	5	1	0	50.3	55.8	-6	1	3	252.7	237.6
4	0	0	278.0	306.0	-10	0	6	45.4	45.2	6	1	0	5.7	15.4	-5	1	3	106.0	98.3
6	0	0	18.7	22.1	-8	0	6	95.3	94.9	7	1	0	5.4	4.3	-4	1	3	90.4	74.7
8	0	0	24.4	23.2	-6	0	6	60.6	60.2	8	1	0	121.5	129.0	-3	1	3	21.9	20.0
10	0	0	150.9	156.1	-4	0	6	87.8	87.9	9	1	0	117.7	123.2	-2	1	3	81.7	82.7
12	0	0	310.2	312.0	-2	0	6	191.2	188.9	10	1	0	119.2	122.9	-1	1	3	68.4	70.8
14	0	0	39.4	42.9	0	0	6	190.9	190.4	11	1	0	39.5	42.7	0	1	3	33.5	32.6
16	0	0	183.7	182.0	2	0	6	15.8	20.2	12	1	0	161.3	164.5	1	1	3	21.7	23.9
18	0	0	21.1	23.9	4	0	6	137.9	143.3	13	1	0	110.4	113.0	2	1	3	40.1	41.9
20	0	0	6.5	7.2	6	0	6	27.4	23.0	14	1	0	128.6	131.0	3	1	3	119.3	115.7
-18	0	0	33.8	33.5	8	0	6	62.9	63.0	15	1	0	29.7	25.5	4	1	3	360.0	357.2
-16	0	0	134.2	128.0	10	0	6	151.1	160.3	16	1	0	25.7	25.3	5	1	3	294.6	292.9
-14	0	0	81.0	82.4	12	0	6	5.9	8.0	17	1	0	10.1	10.7	6	1	3	221.7	224.3
-12	0	0	48.9	48.1	14	0	6	64.4	69.5	18	1	0	6.1	9.2	7	1	3	25.8	23.4
-10	0	0	150.5	148.8	-20	0	7	141.5	144.5	19	1	0	15.6	12.0	8	1	3	119.8	122.2
-8	0	0	18.0	17.1	-18	0	7	90.2	94.5	20	1	0	13.8	8.8	9	1	3	107.7	107.6
-6	0	0	388.0	387.0	-16	0	7	40.1	35.2	21	1	0	77.8	71.5	10	1	3	71.4	75.0
-4	0	0	327.1	328.5	-14	0	7	50.3	51.6	22	1	0	131.6	122.1	11	1	3	22.3	7.3
-2	0	0	40.5	41.7	-12	0	7	26.1	25.5	19	1	0	55.6	53.6	12	1	3	13.0	6.7
0	0	0	186.9	166.0	-10	0	7	13.1	12.8	18	1	0	6.1	5.3	13	1	3	24.9	18.6
2	0	0	14.5	15.7	-8	0	7	326.3	319.1	17	1	0	56.7	54.1	14	1	3	43.9	43.2
4	0	0	5.2	12.7	-6	0	7	190.6	193.1	16	1	0	107.8	105.8	15	1	3	47.0	46.7
6	0	0	557.6	516.0	-4	0	7	245.2	250.0	15	1	0	62.3	60.0	16	1	3	102.2	99.3
8	0	0	268.4	272.7	-2	0	7	98.1	98.8	14	1	0	65.5	64.5	17	1	3	74.4	68.9
10	0	0	247.4	254.0	0	0	7	11.3	7.8	13	1	0	29.1	34.0	18	1	3	54.4	47.8
12	0	0	80.4	81.7	2	0	7	132.6	135.4	12	1	0	15.8	1.7	21	1	3	13.2	7.6
14	0	0	6.0	7.4	4	0	7	152.5	155.2	11	1	0	13.2	12.1	20	1	3	15.6	12.5
16	0	0	76.9	78.5	6	0	7	36.1	38.2	10	1	0	98.8	85.0	19	1	3	14.8	1.7
18	0	0	129.8	129.9	8	0	7	170.7	181.1	9	1	0	155.2	154.3	18	1	3	15.6	11.2
20	0	0	37.5	41.6	10	0	7	76.9	86.8	8	1	0	293.5	285.8	17	1	3	11.9	6.1
-2	0	0	126.9	119.8	12	0	7	25.6	24.7	7	1	0	119.9	122.4	16	1	3	10.3	14.3
-18	0	0	14.1	4.9	14	0	7	54.2	57.1	6	1	0	77.7	83.5	15	1	3	14.6	4.9
-16	0	0	17.4	6.5	-20	0	8	10.3	6.3	5	1	0	286.1	297.6	-14	1	3	99.7	106.7
-14	0	0	6.6	11.9	-18	0	8	36.6	38.5	4	1	0	468.0	467.4	-13	1	3	129.0	132.4
-12	0	0	148.7	149.4	-16	0	8	160.8	166.5	3	1	0	223.4	231.9	-12	1	3	221.1	229.8
-10	0	0	298.0	289.6	-14	0	8	144.7	150.8	2	1	0	56.6	52.5	-11	1	3	136.4	139.7
-8	0	0	53.2	54.8	-12	0	8	63.4	64.1	1	1	0	44.9	44.7	-10	1	3	5.7	3.6
-6	0	0	181.5	191.0	-10	0	8	97.4	98.4	0	1	0	24.6	21.9	-8	1	3	101.1	100.3
-4	0	0	4.9	8.7	-8	0	8	34.6	35.0	1	1	0	51.8	48.8	-7	1	3	18.4	3.3
-2	0	0	218.3	310.4	-6	0	8	15.9	11.9	2	1	0	141.6	147.5	-6	1	3	39.7	39.0
0	0	0	279.3	260.1	-4	0	8	224.2	223.4	3	1	0	58.3	64.9	-5	1	3	70.2	64.8
2	0	0	152.3	152.1	-2	0	8	206.1	208.2	4	1	0	56.6	64.9	-4	1	3	139.1	136.0
2	0	0	119.0	119.6	0	0	8	215.7	213.1	5	1	0	40.4	43.4	-3	1	3	187.6	179.8

4	1	2	297.4	289.3	2	0	8	186.3	192.6	6	1	161.6	170.3	-2	1	268.0	264.1
6	0	2	56.5	54.3	4	0	8	44.5	45.2	7	1	181.3	187.0	-1	1	136.3	128.0
8	0	2	165.4	178.3	6	0	8	19.0	25.8	8	1	307.4	313.4	0	1	150.3	147.8
10	0	2	164.5	171.0	8	0	8	102.8	102.7	9	1	164.6	169.5	1	1	83.0	84.5
12	0	2	123.5	129.0	10	0	8	34.9	37.7	10	1	33.0	32.9	2	1	46.6	47.9
14	0	2	142.3	138.6	12	0	8	106.5	105.3	11	1	63.0	66.2	3	1	100.4	98.6
16	0	2	33.9	34.6	-20	0	9	55.6	56.9	12	1	75.3	75.4	4	1	176.2	179.8
18	0	2	25.3	25.9	-18	0	9	19.6	20.3	13	1	10.0	10.8	5	1	83.8	86.6
-20	0	2	183.0	175.2	-16	0	9	84.2	87.8	14	1	37.6	39.1	6	1	24.4	20.2
-18	0	2	50.4	47.9	-14	0	9	5.3	6.2	15	1	22.3	18.2	7	1	30.2	26.1
-16	0	2	85.3	85.0	-12	0	9	86.4	89.8	16	1	32.8	33.5	8	1	97.1	92.6
-14	0	2	79.4	82.2	-10	0	9	158.2	162.7	17	1	70.7	68.1	-9	1	75.7	74.6
-12	0	2	6.0	9.1	-8	0	9	50.9	51.0	18	1	103.0	94.9	9	1	118.6	121.4
-10	0	2	90.0	50.0	-6	0	9	130.5	130.3	19	1	50.9	47.0	10	1	154.0	158.7
-8	0	2	441.5	421.1	-4	0	9	110.0	111.5	20	1	39.2	39.9	11	1	46.2	48.5
-6	0	2	59.5	56.9	-2	0	9	28.4	28.4	-21	1	22.6	19.0	12	1	40.9	40.8
-4	0	2	456.5	434.4	0	0	9	37.8	37.1	-20	1	16.9	1.6	13	1	62.7	62.3
-2	0	2	104.7	106.5	0	0	9	128.6	132.4	-19	1	23.5	24.9	14	1	88.6	86.5
0	0	2	30.0	28.2	4	0	5	92.2	92.8	-18	1	13.1	10.5	15	1	34.8	32.3
2	0	2	270.2	270.3	6	0	5	186.3	179.5	-17	1	75.9	75.8	16	1	36.9	37.7
4	0	2	148.1	146.2	8	0	9	16.9	19.1	-16	1	170.0	165.1	17	1	23.1	22.3
6	0	2	89.7	88.0	10	0	9	15.1	19.7	-15	1	116.1	111.7	-21	1	65.7	62.7
8	0	2	325.4	328.4	-18	0	10	26.5	25.4	-14	1	28.4	27.7	-20	1	139.5	137.7
10	0	2	77.8	81.1	-16	0	10	67.5	71.8	-13	1	103.6	104.5	-19	1	87.4	86.6
12	0	2	68.3	71.1	-14	0	10	34.8	31.5	-12	1	197.9	196.0	-18	1	60.4	63.4
14	0	2	85.1	82.7	-12	0	10	164.3	165.4	-11	1	145.3	146.0	-17	1	9.8	6.1
16	0	2	12.2	3.2	-10	0	10	94.5	95.5	-10	1	145.6	155.2	-16	1	50.7	57.6
18	0	2	98.5	92.9	-8	0	10	18.5	12.4	-9	1	28.3	27.7	-15	1	46.2	46.1
-20	0	2	12.5	5.9	-6	0	10	74.1	74.6	-8	1	11.3	11.5	-14	1	45.8	48.7
-18	0	2	10.8	3.1	-4	0	10	31.5	28.6	-7	1	33.3	36.1	-13	1	29.9	30.2
-16	0	2	211.7	222.9	-2	0	10	87.8	85.7	-6	1	19.4	16.6	-12	1	17.2	16.3
-14	0	2	89.8	95.2	0	0	10	134.6	136.9	-5	1	67.4	68.4	-11	1	13.5	16.3
-12	0	2	206.6	210.4	2	0	10	79.4	80.1	-4	1	266.5	256.4	-10	1	40.5	40.5
-10	0	2	151.8	150.0	4	0	10	46.4	40.8	-3	1	248.2	239.4	-9	1	133.3	128.5
-8	0	2	29.7	28.6	6	0	10	11.8	8.5	-2	1	31.5	27.6	-8	1	330.3	327.3
-6	0	2	10.8	7.1	8	0	10	8.2	2.9	-1	1	305.2	277.6	-7	1	223.2	211.3
-4	0	2	358.1	356.4	-18	0	11	80.5	84.4	0	1	719.2	574.6	-6	1	107.3	107.4
-2	0	2	114.8	113.6	-16	0	11	11.9	9.7	1	1	394.5	353.7	-5	1	122.2	118.6
0	0	2	664.4	589.3	-14	0	11	9.2	4.3	2	1	209.5	205.8	-4	1	290.5	287.9
2	0	2	241.1	239.8	-12	0	11	40.8	41.0	3	1	85.9	87.6	-3	1	191.3	189.2
4	0	2	156.6	157.8	-10	0	11	55.6	57.4	4	1	168.5	173.5	-2	1	102.2	101.6
6	0	2	6.4	11.5	-8	0	11	150.7	152.9	5	1	60.5	62.4	-1	1	24.5	24.4
8	0	2	110.3	110.6	-6	0	11	168.8	171.2	6	1	20.8	21.5	0	1	60.3	60.3
10	0	2	38.5	38.6	-4	0	11	68.9	67.9	7	1	43.9	45.9	1	1	130.5	133.1
12	0	2	210.5	221.7	-2	0	11	37.3	35.4	8	1	41.8	41.8	2	1	98.5	96.6
14	0	2	110.3	110.8	0	0	11	32.0	30.7	9	1	25.7	13.6	3	1	142.8	147.4
16	0	2	98.4	57.8	2	0	11	31.5	31.3	10	1	80.8	86.2	4	1	68.5	67.4
-20	0	2	27.0	28.2	4	0	11	102.7	99.7	11	1	118.3	120.8	5	1	18.5	22.2
-18	0	2	85.1	84.8	6	0	11	66.5	68.5	12	1	210.1	212.0	6	1	77.9	82.8
-16	0	2	103.9	107.2	-16	0	12	68.5	67.7	13	1	132.5	134.9	7	1	184.3	197.4
-14	0	2	5.3	9.9	-14	0	12	114.1	116.7	14	1	65.8	64.5	8	1		

	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
-10	1	1	6	117.3	126.7	-2	1	9	51.3	55.3	11	2	0	214.9	221.1	2	2	3	68.8	64.8
-9	1	1	6	62.4	58.9	-1	1	9	26.5	23.2	12	2	0	65.7	65.2	3	2	3	154.5	155.8
-8	1	1	6	40.2	41.1	0	1	9	18.6	26.9	13	2	0	183.7	185.1	4	2	3	30.3	29.8
-7	1	1	6	9.0	1.1	1	1	9	10.7	9.1	14	2	0	5.7	7.1	5	2	3	85.1	85.3
-6	1	1	6	15.1	20.2	2	1	9	57.1	57.9	15	2	0	120.6	119.2	6	2	3	87.0	87.9
-5	1	1	6	81.0	79.6	3	1	9	56.1	57.5	16	2	0	41.8	41.1	7	2	3	201.6	210.9
-4	1	1	6	212.8	213.5	4	1	9	109.4	113.1	17	2	0	114.0	110.2	8	2	3	88.3	94.2
-3	1	1	6	235.3	235.7	5	1	9	78.3	78.2	18	2	0	12.5	7.1	9	2	3	229.8	240.1
-2	1	1	6	150.5	154.2	6	1	9	52.2	51.8	19	2	0	36.7	31.3	10	2	3	224.1	233.6
-1	1	1	6	65.7	67.5	7	1	9	9.5	9.5	20	2	0	13.8	3.0	11	2	3	14.0	11.1
0	1	1	6	256.2	283.5	8	1	9	75.8	78.8	20	2	1	5.9	9.0	11	2	3	22.6	28.9
1	1	1	6	252.8	248.2	9	1	9	67.2	67.2	19	2	1	72.5	68.6	12	2	3	14.0	11.0
2	1	1	6	180.6	188.4	10	1	9	54.1	55.6	18	2	1	49.0	44.6	13	2	3	11.4	5.8
3	1	1	6	31.0	28.9	11	1	9	5.2	1.1	17	2	1	131.3	119.6	14	2	3	21.4	16.2
4	1	1	6	47.7	49.1	11	1	10	31.9	31.4	16	2	1	23.5	23.7	15	2	3	51.7	48.5
5	1	1	6	24.9	22.9	19	1	10	41.9	41.1	15	2	1	5.6	7.5	16	2	3	6.8	6.3
6	1	1	6	40.0	34.6	17	1	10	16.2	11.9	14	2	1	6.2	8.3	17	2	3	66.0	62.1
7	1	1	6	59.6	60.8	16	1	10	78.9	82.0	13	2	1	19.3	17.5	18	2	3	41.1	38.0
8	1	1	6	76.0	80.7	15	1	10	91.9	95.0	12	2	1	22.7	18.8	17	2	4	42.2	40.2
9	1	1	6	42.6	44.2	14	1	10	117.1	119.8	11	2	1	120.1	119.0	21	2	4	41.1	7.0
10	1	1	6	15.2	4.4	13	1	10	15.7	21.1	10	2	1	20.7	17.1	19	2	4	41.2	42.4
11	1	1	6	47.5	47.5	12	1	10	16.6	6.1	9	2	1	210.3	211.3	18	2	4	11.0	7.4
12	1	1	6	125.2	133.8	11	1	10	37.6	37.2	8	2	1	101.2	98.4	17	2	4	107.8	106.7
13	1	1	6	103.5	107.7	10	1	10	46.5	48.3	7	2	1	334.2	324.8	16	2	4	48.5	53.7
14	1	1	6	79.7	84.2	9	1	10	29.4	27.9	6	2	1	122.5	129.2	15	2	4	193.5	200.7
15	1	1	6	5.9	1.0	8	1	10	22.7	20.2	5	2	1	65.1	71.9	14	2	4	42.0	41.7
21	1	1	7	30.8	28.7	6	1	10	6.5	15.4	4	2	1	10.5	3.4	13	2	4	66.6	68.5
20	1	1	7	40.0	41.0	5	1	10	13.5	17.4	3	2	1	18.8	21.6	12	2	4	39.7	40.1
19	1	1	7	18.7	9.3	4	1	10	12.4	14.4	2	2	1	78.5	90.6	11	2	4	192.4	199.7
18	1	1	7	32.7	23.9	3	1	10	109.0	106.9	1	2	1	66.9	70.2	10	2	4	68.5	71.1
17	1	1	7	58.8	58.1	2	1	10	127.0	126.1	0	2	1	27.5	27.0	9	2	4	95.8	97.5
16	1	1	7	82.4	86.1	1	1	10	147.7	152.2	1	2	1	83.8	98.4	8	2	4	22.9	24.1
15	1	1	7	23.2	20.3	0	1	10	26.8	25.6	2	2	1	15.4	23.0	7	2	4	26.4	27.0
14	1	1	7	9.3	4.6	0	1	10	76.8	76.8	3	2	1	279.1	314.5	6	2	4	41.9	42.2
13	1	1	7	12.1	12.5	1	1	10	116.8	114.2	4	2	1	114.8	128.8	5	2	4	115.2	111.6
12	1	1	7	98.6	101.7	2	1	10	57.4	102.8	5	2	1	472.0	472.2	4	2	4	103.0	99.0
11	1	1	7	121.7	120.9	3	1	10	29.6	25.8	6	2	1	63.2	68.0	3	2	4	307.2	304.9
10	1	1	7	123.1	126.9	4	1	10	10.4	8.7	7	2	1	106.9	112.6	2	2	4	16.8	11.3
9	1	1	7	30.0	24.1	5	1	10	17.9	20.0	9	2	1	59.5	60.7	1	2	4	197.7	188.1
8	1	1	7	91.1	89.7	6	1	10	14.9	11.1	9	2	1	194.6	203.2	0	2	4	141.3	137.5
7	1	1	7	102.4	102.1	7	1	10	27.8	25.7	10	2	1	61.9	65.1	1	2	4	499.3	450.9
6	1	1	7	150.0	150.4	8	1	10	62.5	60.5	11	2	1	17.2	10.3	2	2	4	96.9	98.5
5	1	1	7	77.6	71.9	9	1	10	36.8	37.4	12	2	1	6.0	9.4	3	2	4	30.7	19.3

-4	1	7	100.2	100.1	-18	1	11	11.8	9.3	13	2	1	6.5	17.3	4	2	4	18.0	0.3
-3	1	7	51.7	51.2	-17	1	11	19.3	22.4	14	2	1	18.4	21.0	5	2	4	45.6	42.9
-2	1	7	14.0	8.4	-16	1	11	40.7	45.9	15	2	1	98.9	101.2	6	2	4	14.5	15.2
-1	1	7	13.4	5.0	-15	1	11	6.4	17.5	16	2	1	37.3	37.7	7	2	4	82.6	82.2
0	1	7	59.1	57.4	-14	1	11	14.2	1.4	17	2	1	104.8	104.0	8	2	4	32.5	33.1
1	1	7	77.0	79.8	-13	1	11	8.6	5.2	18	2	1	5.6	1.3	9	2	4	31.5	27.8
2	1	7	99.9	101.9	-12	1	11	41.9	41.4	19	2	1	50.3	46.4	10	2	4	23.4	26.2
3	1	7	11.0	16.3	-11	1	11	70.8	72.7	21	2	2	9.3	5.0	11	2	4	118.0	123.0
4	1	7	135.3	139.9	-10	1	11	92.2	99.9	20	2	2	12.9	3.3	12	2	4	66.6	71.6
5	1	7	154.2	157.7	-9	1	11	50.0	44.9	19	2	2	6.7	2.1	13	2	4	183.0	184.5
6	1	7	180.0	190.2	-8	1	11	6.6	14.7	18	2	2	18.7	15.5	14	2	4	30.1	28.5
7	1	7	46.6	43.0	-7	1	11	28.6	28.3	17	2	2	22.5	17.4	15	2	4	24.6	25.1
8	1	7	14.9	12.2	-6	1	11	51.0	52.6	16	2	2	5.6	1.2	16	2	4	11.0	14.8
9	1	7	31.4	29.8	-5	1	11	41.7	39.3	15	2	2	36.3	38.6	17	2	4	68.4	67.3
10	1	7	29.9	29.8	-4	1	11	56.0	56.2	14	2	2	6.2	62.1	17	2	4	37.8	31.4
11	1	7	9.4	7.0	-3	1	11	42.7	40.1	13	2	2	220.4	219.0	17	2	4	6.0	8.8
12	1	7	20.2	18.7	-2	1	11	23.3	19.4	12	2	2	65.0	68.5	19	2	4	15.5	14.0
13	1	7	18.8	13.2	-1	1	11	5.0	0.3	11	2	2	111.5	111.3	18	2	4	31.5	32.2
14	1	7	5.4	3.2	0	1	11	24.1	28.3	10	2	2	27.8	28.1	17	2	4	115.0	114.1
-20	1	8	22.9	21.1	1	1	11	42.4	48.2	9	2	2	141.8	149.4	16	2	4	36.4	37.0
-19	1	8	12.9	13.7	2	1	11	80.5	84.5	8	2	2	41.1	42.5	15	2	4	38.3	39.4
-18	1	8	27.0	27.4	3	1	11	36.4	38.9	7	2	2	16.4	7.4	14	2	4	10.0	6.6
-17	1	8	14.4	16.3	4	1	11	18.7	19.2	6	2	2	93.1	91.9	13	2	4	17.7	19.6
-16	1	8	49.8	51.6	5	1	11	58.9	59.1	5	2	2	15.4	13.8	12	2	4	28.1	28.6
-15	1	8	48.0	47.0	6	1	11	89.5	96.3	4	2	2	33.6	34.7	11	2	4	175.9	181.3
-14	1	8	21.5	17.9	-10	1	12	47.3	46.8	3	2	2	75.1	78.1	10	2	4	51.8	57.8
-13	1	8	70.0	70.8	-15	1	12	43.3	44.3	2	2	2	127.4	123.6	9	2	4	61.2	48.8
-12	1	8	171.6	170.7	-14	1	12	31.2	34.6	1	2	2	220.7	203.9	8	2	4	46.4	46.3
-11	1	8	128.7	128.7	-13	1	12	19.9	16.6	0	2	2	40.2	39.2	7	2	4	229.1	221.5
-10	1	8	65.8	67.2	-12	1	12	73.4	79.2	1	2	2	22.8	22.0	6	2	4	108.2	109.1
-9	1	8	5.3	11.1	-11	1	12	76.9	74.7	2	2	2	75.1	78.1	5	2	4	147.3	141.7
-8	1	8	36.0	35.1	-10	1	12	9.6	57.1	3	2	2	231.7	239.3	4	2	4	42.9	45.1
-7	1	8	12.4	10.8	-9	1	12	6.3	8.7	4	2	2	55.7	57.5	3	2	4	61.2	50.6
-6	1	8	77.9	76.6	-8	1	12	12.0	2.0	5	2	2	129.2	136.8	2	2	4	22.2	27.0
-5	1	8	15.5	13.9	-7	1	12	50.4	50.8	6	2	2	6.6	7.4	1	2	4	21.0	15.8
-4	1	8	23.2	15.8	-6	1	12	30.6	29.3	7	2	2	20.3	19.4	0	2	4	22.9	17.9
-3	1	8	58.6	58.0	-5	1	12	32.2	33.9	8	2	2	37.2	48.0	1	2	4	119.9	123.1
-2	1	8	129.5	130.6	-4	1	12	5.4	3.6	9	2	2	200.0	208.9	2	2	4	21.9	23.5
-1	1	8	82.0	82.7	-3	1	12	37.0	34.2	10	2	2	54.7	57.0	3	2	4	91.2	92.1
0	1	8	136.4	142.5	-2	1	12	36.1	31.2	11	2	2	31.9	32.0	4	2	4	67.9	71.5
1	1	8	77.1	80.4	-1	1	12	44.5	44.1	12	2	2	29.2	29.4	5	2	4	82.8	85.3
2	1	8	37.4	42.7	0	1	12	55.0	51.0	13	2	2	144.2	145.0	6	2	4	30.7	32.2
3	1	8	15.9	14.6	1	1	12	44.5	44.1	14	2	2	10.2	16.7	7	2	4	17.3	2.8
4	1	8	68.0	74.5	2	1	12	12.1	10.2	15	2	2	5.9	4.8	8	2	4	97.7	104.4
5	1	8	31.0	41.8	3	1	12	6.3	1.9	16	2	2	35.3	35.9	9	2	4	27.4	30.3
6	1	8	6.0	8.3	-13	1	13	33.8	35.0	17	2	2	5.9	4.8	10	2	4	7.0	9.2
7	1	8	12.7	9.0	-12	1	13	34.9	31.9	18	2	2	16.6	15.6	11	2	4	5.8	0.7
8	1	8	26.8	23.1	-11	1	13	44.2	45.5	19	2	2	118.6	107.8	12	2	4	6.4	8.3
9	1	8	59.1	57.8	-10	1	13	5.5	3.7	20	2	2	46.0	42.8	13	2	4	10.1	6.0
10	1	8	103.5	105.9	-9	1	13	76.4	72.5	-21	2	3	128.5	121.7	14	2	4	56.0	55.3
11	1	8	52.4	54.9	-8	1	13	76.4	72.5	-19	2	3	128.5	121.7	15	2	4	56.0	55.3

12	1	8	25.1	29.0	-7	1	13	94.0	91.4	-18	2	3	18.6	16.7	16	2	5	32.6	29.6
-20	1	9	82.6	68.5	-6	1	12	103.3	104.1	-17	2	3	53.5	45.9	-21	2	6	26.7	21.7
-19	1	5	72.8	71.9	-5	1	13	34.7	32.4	-16	2	3	40.9	36.3	-20	2	6	11.0	8.4
-18	1	9	69.1	72.7	-4	1	13	21.3	20.0	-15	2	3	82.6	83.6	-19	2	6	18.4	11.8
-17	1	9	21.5	21.9	-3	1	13	30.0	27.3	-14	2	3	25.2	24.0	-18	2	6	20.3	23.8
-16	1	9	6.4	6.9	-2	1	13	23.9	20.7	-13	2	3	20.8	27.2	-17	2	6	21.8	21.1
-15	1	9	14.5	11.8	-1	1	13	5.8	7.0	-12	2	3	6.1	2.0	-16	2	6	19.7	20.2
-14	1	9	14.9	15.2	0	1	13	29.9	29.9	-11	2	3	24.7	12.5	-15	2	6	29.2	26.3
-13	1	9	5.3	1.1	0	2	0	167.1	153.3	-10	2	3	50.5	52.6	-14	2	6	44.3	46.6
-12	1	9	39.6	42.8	1	2	0	544.6	483.2	-8	2	3	85.1	87.0	-13	2	6	160.5	160.6
-11	1	9	43.9	43.7	1	2	0	37.6	37.8	-7	2	3	31.0	32.5	-12	2	6	80.6	83.2
-10	1	9	28.5	27.0	2	2	0	154.3	160.2	-6	2	3	31.3	28.9	-11	2	6	194.9	184.9
-9	1	5	38.0	35.2	3	2	0	79.6	82.4	-5	2	3	334.0	320.9	-10	2	6	25.4	24.0
-8	1	9	191.9	195.3	4	2	0	97.6	101.1	-4	2	3	141.0	135.9	-9	2	6	55.5	57.1
-7	1	9	168.8	158.1	5	2	0	16.0	11.0	-3	2	3	325.6	320.7	-8	2	6	14.2	10.6
-6	1	9	148.6	151.8	6	2	0	58.1	66.4	-2	2	3	50.3	52.7	-7	2	6	5.5	6.5
-5	1	9	5.8	2.2	7	2	0	23.0	18.3	-1	2	3	30.0	32.8	-6	2	6	27.5	28.6
-4	1	9	101.5	102.8	8	2	0	68.3	74.1	0	2	3	14.5	16.3	-5	2	6	34.4	15.8
-3	1	9	81.4	79.6	9	2	0	45.7	47.4	1	2	3	81.4	78.8	-4	2	6	10.5	11.6

H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
-3	2	6	150.8	128.0	-15	2	10	65.3	65.0	-3	3	1	260.7	262.0	-7	3	4	12.5	7.4
-2	2	6	105.4	110.3	-14	2	10	15.9	6.4	-2	3	1	15.1	11.3	-6	3	4	5.3	3.5
-1	2	6	175.8	165.8	-13	2	10	57.4	60.1	-1	3	1	38.0	38.1	-5	3	4	31.4	29.3
0	2	6	84.8	86.5	-12	2	10	39.9	40.6	0	3	1	13.8	11.8	-4	3	4	77.7	72.8
1	2	6	147.0	106.2	-11	2	10	145.5	153.0	1	3	1	94.5	98.7	-3	3	4	211.8	212.7
2	2	6	16.9	5.7	-10	2	10	19.2	17.4	2	3	1	17.7	14.4	-2	3	4	38.4	37.5
3	2	6	90.0	93.1	-9	2	10	6.0	3.9	3	3	1	127.5	142.7	-1	3	4	195.1	186.5
4	2	6	33.7	34.9	-8	2	10	19.3	10.2	4	3	1	14.4	17.0	0	3	4	12.6	17.6
5	2	6	79.2	83.1	-7	2	10	23.7	22.8	5	3	1	36.2	38.7	1	3	4	37.4	37.2
6	2	6	6.6	1.7	-6	2	10	58.2	21.8	6	3	1	26.8	22.0	2	3	4	33.1	30.9
7	2	6	18.4	18.4	-5	2	10	18.1	59.7	7	3	1	247.4	256.9	3	3	4	158.3	157.4
8	2	6	29.6	31.2	-4	2	10	18.1	17.0	8	3	1	102.4	108.6	4	3	4	71.1	75.2
9	2	6	136.7	139.8	-3	2	10	45.0	44.9	9	3	1	179.0	183.9	5	3	4	78.7	80.9
10	2	6	53.7	57.1	-2	2	10	35.4	38.5	10	3	1	28.0	28.9	6	3	4	17.7	11.9
11	2	6	83.6	89.0	-1	2	10	94.7	94.2	11	3	1	58.7	62.6	7	3	4	7.3	10.9
12	2	6	5.9	11.4	0	2	10	46.4	48.4	12	3	1	41.2	41.6	8	3	4	19.2	20.8
13	2	6	47.8	48.1	1	2	10	108.9	108.9	13	3	1	6.4	7.1	9	3	4	142.6	151.8
14	2	6	30.3	27.9	2	2	10	6.2	2.4	14	3	1	6.0	8.1	10	3	4	44.9	48.7
15	2	6	48.4	48.3	3	2	10	5.7	6.5	15	3	1	31.7	30.0	11	3	4	64.4	65.7
16	2	6	27.8	35.7	4	2	10	22.2	17.2	16	3	1	5.7	6.3	12	3	4	28.4	23.1
17	2	6	128.9	134.9	5	2	10	27.3	26.8	17	3	1	96.4	93.1	13	3	4	91.4	90.0
18	2	6	34.1	33.5	6	2	10	6.4	5.6	18	3	1	26.9	19.6	14	3	4	6.3	9.2
19	2	6	6.2	10.3	7	2	10	25.2	29.2	19	3	1	78.9	74.9	15	3	4	64.9	64.1
20	2	6	6.1	4.2	8	2	10	13.9	2.6	20	3	1	6.5	10.6	16	3	4	6.7	10.3
-1	2	6	38.7	40.8	-17	2	10	36.9	38.2	-19	3	1	14.6	15.6	-20	3	4	55.0	54.3
-2	2	6	5.5	3.4	-16	2	10	4.7	2.7	-18	3	1	6.0	9.1	-20	3	4	122.5	119.4
-3	2	6	16.1	19.3	-15	2	10	5.7	4.6	-17	3	1	112.2	103.4	-19	3	4	13.1	12.4
-4	2	6	29.2	24.1	-14	2	10	5.2	3.1	-16	3	1	72.2	68.6	-18	3	4	5.9	1.3
-5	2	6	49.0	52.7	-13	2	10	5.2	5.0	-15	3	1	161.7	151.8	-17	3	4	21.0	25.3
-6	2	6	21.3	18.3	-12	2	10	21.7	22.5	-14	3	1	20.9	115.9	-16	3	4	51.6	52.8
-7	2	6	143.2	142.7	-11	2	10	63.3	67.3	-13	3	1	118.2	115.9	-15	3	4	22.1	25.7
-8	2	6	85.4	90.2	-10	2	10	12.9	4.0	-12	3	1	77.5	74.9	-14	3	4	22.1	25.7
-9	2	6	31.6	312.0	-9	2	10	35.0	32.3	-11	3	1	221.6	217.9	-13	3	4	19.9	11.7
-10	2	6	44.5	44.9	-8	2	10	45.9	48.0	-10	3	1	19.8	28.5	-11	3	4	5.8	8.0
-11	2	6	81.0	80.1	-7	2	10	195.2	192.6	-9	3	1	81.4	83.5	-10	3	4	28.8	5.1
-12	2	6	37.5	38.5	-6	2	10	40.7	41.3	-8	3	1	6.7	5.5	-9	3	4	194.5	194.6
-13	2	6	202.2	159.8	-5	2	10	39.5	39.6	-7	3	1	21.3	24.1	-8	3	4	119.7	119.6
-14	2	6	6.0	14.8	-4	2	10	9.9	7.9	-6	3	1	28.1	35.4	-7	3	4	267.1	266.9
-15	2	6	6.2	10.1	-3	2	10	81.6	81.8	-5	3	1	107.6	114.8	-6	3	4	52.1	50.7
-16	2	6	13.8	10.8	-2	2	10	9.3	8.1	-4	3	1	68.8	73.5	-5	3	4	143.1	142.6
-17	2	6	30.0	29.7	-1	2	10	13.8	19.0	-3	3	1	223.2	214.6	-4	3	4	121.5	124.3
-18	2	6	36.6	43.8	0	2	10	18.0	12.2	-2	3	1	18.5	17.8	-3	3	4	225.1	217.4
-19	2	6	138.2	138.8	1	2	10	16.0	11.5	-1	3	1	343.4	326.2	-2	3	4	34.0	31.0

4	2	7	56.9	60.3	2	2	11	20.5	17.1	0	3	2	183.1	186.2	-1	3	5	22.5	17.1
5	2	7	119.4	121.8	3	2	11	66.5	66.3	1	3	2	448.1	436.5	0	3	5	17.5	3.4
5	2	7	6.3	5.4	4	2	11	40.3	40.6	2	3	2	39.9	38.5	1	3	5	78.9	79.0
7	2	7	61.0	65.0	5	2	11	98.9	94.9	3	3	2	44.9	46.7	2	3	5	19.3	12.6
8	2	7	38.1	40.5	6	2	11	10.3	15.2	4	3	2	71.6	81.7	3	3	5	164.1	168.5
9	2	7	152.2	159.2	6	2	12	103.0	106.5	5	3	2	68.6	73.6	3	3	5	38.7	38.5
10	2	7	6.0	10.4	7	2	12	35.3	34.5	6	3	2	22.2	23.1	5	3	5	77.7	80.4
11	2	7	5.9	6.8	7	2	12	57.0	58.1	7	3	2	54.9	59.8	6	3	5	32.6	35.4
12	2	7	17.0	4.6	8	2	12	17.4	15.4	8	3	2	6.5	4.3	7	3	5	130.3	135.6
13	2	7	10.1	4.4	9	2	12	15.7	13.3	9	3	2	6.2	9.2	8	3	5	66.6	65.0
13	2	8	15.4	4.1	9	2	12	23.5	20.5	10	3	2	15.8	6.3	9	3	5	158.2	169.8
19	2	8	43.9	42.9	8	2	12	11.0	1.7	11	3	2	67.6	68.9	10	3	5	45.3	48.0
18	2	8	6.2	6.4	7	2	12	6.5	5.8	12	3	2	167.2	168.4	11	3	5	13.8	9.2
17	2	8	46.1	47.9	6	2	12	5.6	5.8	13	3	2	30.3	34.6	12	3	5	15.8	22.2
16	2	8	33.7	35.3	5	2	12	6.0	4.7	14	3	2	167.2	168.4	13	3	5	15.8	14.5
15	2	8	181.5	165.7	4	2	12	23.4	24.1	15	3	2	61.2	57.4	14	3	5	15.5	14.5
14	2	8	49.5	55.2	3	2	12	142.6	139.2	16	3	2	54.1	51.1	15	3	5	16.4	12.4
13	2	8	33.8	31.6	2	2	12	37.4	36.2	17	3	2	85.6	81.9	15	3	5	56.0	54.0
12	2	8	8.6	2.4	1	2	12	71.1	67.0	18	3	2	5.8	2.7	19	3	6	11.4	5.9
11	2	8	99.8	101.9	0	2	12	15.4	5.2	20	3	2	13.4	7.3	18	3	6	30.2	32.0
10	2	8	34.0	34.9	1	2	12	86.4	85.7	19	3	2	53.7	47.5	17	3	6	8.3	10.0
9	2	8	65.0	65.9	2	2	12	26.0	22.6	18	3	2	23.6	18.2	16	3	6	66.0	68.7
8	2	8	5.4	9.0	3	2	12	30.3	32.9	17	3	2	129.9	123.6	15	3	6	66.6	69.2
7	2	8	5.8	4.0	3	2	13	14.6	6.1	16	3	2	27.1	25.4	14	3	6	174.3	178.4
6	2	8	5.8	12.5	11	2	13	67.0	64.6	15	3	2	22.1	22.1	13	3	6	28.5	27.5
4	2	8	58.7	61.5	10	2	13	31.1	31.0	14	3	2	10.0	11.0	12	3	6	8.8	11.4
5	2	8	51.9	50.8	9	2	13	65.3	65.6	13	3	2	12.5	11.5	11	3	6	50.2	47.0
3	2	8	259.0	268.0	8	2	13	21.8	23.5	12	3	2	43.2	43.1	10	3	6	133.5	134.1
2	2	8	45.6	46.9	7	2	13	5.8	4.9	11	3	2	43.2	43.1	9	3	6	33.4	29.0
1	2	8	6.2	6.1	6	2	13	15.8	13.1	10	3	2	6.3	7.2	8	3	6	10.4	12.5
0	2	8	47.1	46.9	5	2	13	29.9	31.6	9	3	2	61.3	66.0	7	3	6	23.9	22.4
1	2	8	249.8	250.4	4	2	13	20.6	19.5	8	3	2	115.6	121.3	6	3	6	17.5	11.3
2	2	8	52.5	54.8	3	2	13	32.2	34.5	7	3	2	266.1	267.8	5	3	6	89.1	88.7
3	2	8	47.0	45.0	2	2	13	9.6	5.1	6	3	2	18.7	9.3	4	3	6	66.3	62.4
4	2	8	6.4	2.3	1	2	13	122.4	114.7	5	3	2	170.2	167.9	3	3	6	259.6	253.7
5	2	8	6.3	15.1	2	2	13	14.8	7.2	4	3	2	14.2	12.4	2	3	6	81.0	78.8
6	2	8	10.6	7.0	3	2	13	297.5	293.0	3	3	2	12.7	14.5	1	3	6	111.5	77.8
7	2	8	60.5	57.4	4	2	13	73.1	76.5	2	3	2	6.3	3.2	0	3	6	309.3	111.5
8	2	8	36.2	31.0	5	2	13	111.1	116.2	1	3	2	29.1	27.2	1	3	6	54.2	296.4
9	2	8	67.8	68.2	6	2	13	6.0	2.1	0	3	2	6.1	3.2	2	3	6	38.9	39.1
10	2	8	10.7	2.1	7	2	13	43.0	42.6	1	3	2	94.9	93.6	3	3	6	29.4	31.6
11	2	8	34.7	32.7	8	2	13	18.2	20.6	2	3	2	14.1	15.7	4	3	6	39.7	39.0
12	2	8	33.4	36.3	9	2	13	164.6	177.2	3	3	2	126.9	134.9	5	3	6	19.6	18.2
19	2	9	32.1	34.9	10	2	13	33.0	38.1	4	3	2	133.3	138.6	6	3	6	63.6	67.1
18	2	9	14.6	2.8	11	2	13	37.7	39.1	5	3	2	363.9	360.0	7	3	6	14.0	16.8
17	2	9	64.5	65.4	12	2	13	56.7	58.8	6	3	2	46.9	50.0	8	3	6	72.4	73.9
16	2	9	21.4	18.8	13	2	13	177.6	177.9	7	3	2	34.9	25.6	9	3	6	51.7	54.5
15	2	9	40.8	39.7	14	2	13	6.4	8.6	8	3	2	69.5	69.1	10	3	6	13.4	16.5
14	2	9	5.2	1.5	15	2	13	74.5	72.7	9	3	2	123.0	128.6	11	3	6	72.2	75.7
13	2	9	5.8	13.1	16	2	13	15.5	4.8	10	3	2	11.7	4.4	12	3	6	43.1	39.7
12	2	9	11.4	17.0	17	2	13	24.0	16.8	11	3	2	16.3	14.5	13	3	6	128.0	132.3

-11	2	9	139.2	143.6	18	3	0	19.4	19.7	12	3	3	13.8	11.4	14	3	6	33.2	34.9
-10	2	9	48.6	52.5	19	3	0	16.7	15.0	13	3	3	11.6	6.1	-20	3	7	9.7	6.2
-8	2	9	16.9	16.0	-20	3	1	45.6	41.1	14	3	3	21.8	17.5	-19	3	7	5.8	1.5
-7	2	9	84.7	85.5	-19	3	1	87.8	77.0	15	3	3	71.9	68.5	-18	3	7	9.9	3.7
0	2	9	26.7	22.6	-18	3	1	17.7	9.1	16	3	3	32.5	27.9	-17	3	7	86.1	89.8
1	2	9	93.2	91.3	-17	3	1	70.3	64.2	17	3	3	103.9	96.7	-16	3	7	31.6	30.4
2	2	9	40.7	40.0	-16	3	1	36.9	35.6	-20	3	3	6.1	9.5	-15	3	7	42.5	41.1
3	2	9	35.9	37.2	-15	3	1	86.3	83.6	-19	3	3	13.0	6.8	-14	3	7	5.4	5.1
4	2	9	6.6	13.2	-14	3	1	16.6	20.9	-18	3	3	25.9	24.0	-13	3	7	9.2	12.7
5	2	9	159.1	158.7	-13	3	1	28.4	25.8	-17	3	3	17.3	18.9	-12	3	7	50.5	46.0
6	2	9	50.1	50.1	-12	3	1	6.3	10.0	-16	3	3	9.5	3.5	-11	3	7	144.2	146.2
7	2	9	77.7	80.6	-11	3	1	18.9	25.3	-15	3	3	18.5	13.5	-10	3	7	25.8	27.2
8	2	9	6.3	13.5	-10	3	1	19.8	19.0	-14	3	3	18.4	6.4	-9	3	7	45.4	43.6
9	2	9	51.7	54.6	-9	3	1	225.0	229.1	-13	3	3	171.3	185.0	-8	3	7	50.2	57.5
10	2	9	28.4	26.7	-8	3	1	105.9	108.7	-12	3	3	71.8	75.2	-7	3	7	150.6	151.2
-9	2	9	6.7	8.0	-7	3	1	144.2	152.7	-11	3	3	139.1	148.5	-6	3	7	18.4	10.0
-18	2	10	15.5	13.6	-6	3	1	19.7	4.5	-10	3	3	5.4	0.7	-5	3	7	153.8	152.0
-17	2	10	32.4	34.5	-5	3	1	323.6	334.3	-9	3	3	51.6	96.0	-4	3	7	22.5	21.3
-16	2	10	26.1	26.0	-4	3	1	172.6	176.7	-8	3	3	33.3	31.8	-3	3	7	68.6	67.8

	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
-2	3	3	7	19.3	17.0	-3	3	12	5.2	4.3	-8	4	3	202.4	211.1	-1	4	6	149.3	145.6
-1	3	3	7	6.4	6.1	-2	3	12	16.5	2.9	-7	4	3	74.5	79.7	0	4	6	105.8	105.3
0	3	3	7	6.7	15.7	-1	3	12	65.5	61.2	-6	4	3	17.0	7.9	1	4	6	35.5	31.9
1	3	3	7	92.4	91.0	0	3	12	17.9	14.4	-5	4	3	126.1	127.9	2	4	6	40.0	35.2
2	3	3	7	31.0	34.6	1	3	12	79.3	75.1	-4	4	3	260.5	265.2	3	4	6	63.4	58.9
3	3	3	7	6.4	5.6	-8	3	13	28.9	23.0	-3	4	3	138.3	136.2	4	4	6	82.3	83.0
4	3	3	7	49.1	52.6	-7	3	13	111.1	108.2	-2	4	3	60.6	58.5	5	4	6	6.3	13.9
5	3	3	7	213.4	218.3	-6	3	13	46.6	43.8	-1	4	3	14.6	3.0	6	4	6	19.3	20.5
6	3	3	7	54.7	54.5	-5	3	12	42.0	38.3	0	4	3	17.0	5.3	7	4	6	6.9	0.4
7	3	3	7	37.2	38.8	0	4	0	435.9	418.7	1	4	3	48.0	49.1	8	4	6	42.6	39.2
8	3	3	7	25.7	25.8	1	4	0	182.0	174.9	2	4	3	92.6	95.9	9	4	6	69.2	70.6
9	3	3	7	42.9	40.8	2	4	0	46.3	41.7	3	4	3	106.3	110.4	10	4	6	96.1	96.1
10	3	3	7	9.7	2.4	3	4	0	37.2	32.9	4	4	3	48.0	53.3	11	4	6	60.9	61.4
11	3	3	7	6.3	5.8	4	4	0	163.1	163.4	5	4	3	11.4	12.9	12	4	6	9.0	3.9
12	3	3	7	16.4	13.0	5	4	0	56.0	54.5	6	4	3	40.4	38.8	13	4	6	24.2	24.4
13	3	3	7	19.5	12.7	6	4	0	5.8	10.9	7	4	3	130.6	135.5	-19	4	7	62.9	63.4
-14	3	3	8	13.6	16.0	7	4	0	19.3	18.7	8	4	3	186.9	190.4	-18	4	7	52.2	53.3
-15	3	3	8	12.0	8.4	8	4	0	27.2	27.2	9	4	3	78.8	81.7	-17	4	7	20.1	24.5
-16	3	3	8	40.3	41.3	9	4	0	37.2	35.2	9	4	3	78.8	81.7	-16	4	7	25.4	24.5
-17	3	3	8	6.0	7.0	10	4	0	54.2	59.2	10	4	3	57.5	55.6	-15	4	7	19.8	19.8
-18	3	3	8	48.2	49.3	11	4	0	117.4	124.7	11	4	3	13.7	10.9	-14	4	7	31.4	29.1
-19	3	3	8	14.8	18.0	12	4	0	153.2	168.5	12	4	3	51.0	51.5	-13	4	7	20.7	17.4
-20	3	3	8	104.6	110.3	13	4	0	51.5	53.0	13	4	3	15.3	15.4	-12	4	7	14.2	13.2
-11	3	3	8	53.6	52.7	14	4	0	31.7	29.3	14	4	3	43.5	42.2	-11	4	7	5.4	5.0
-12	3	3	8	152.9	160.0	15	4	0	56.4	54.7	15	4	3	23.9	17.2	-10	4	7	5.6	15.0
-9	3	3	8	23.8	28.2	16	4	0	113.0	111.5	16	4	3	6.4	5.5	-9	4	7	96.2	98.6
-8	3	3	8	14.0	10.4	17	4	0	45.6	44.5	-19	4	4	9.5	2.7	-8	4	7	172.1	173.0
-7	3	3	8	15.2	15.6	18	4	0	21.7	15.6	-17	4	4	9.5	1.1	-7	4	7	116.5	116.1
-6	3	3	8	9.4	14.0	-19	4	1	51.8	43.6	-18	4	4	47.6	44.1	-6	4	7	112.5	112.5
-5	3	3	8	21.5	20.8	-18	4	1	80.1	72.1	-16	4	4	145.0	139.5	-5	4	7	21.4	18.1
-4	3	3	8	26.1	27.0	-17	4	1	67.8	66.9	-15	4	4	91.1	89.8	-4	4	7	144.2	139.5
-3	3	3	8	46.7	46.8	-16	4	1	47.0	45.0	-14	4	4	47.1	45.3	-3	4	7	67.1	68.5
-2	3	3	8	79.1	79.5	-15	4	1	12.3	5.1	-13	4	4	14.4	5.1	-2	4	7	44.6	42.4
-1	3	3	8	16.2	12.6	-14	4	1	37.5	33.2	-12	4	4	117.1	128.9	-1	4	7	6.8	9.7
0	3	3	8	146.2	144.7	-13	4	1	10.6	5.1	-11	4	4	104.9	109.4	0	4	7	16.2	9.7
1	3	3	8	29.9	20.5	-12	4	1	86.6	81.4	-10	4	4	77.3	81.0	1	4	7	20.3	24.6
2	3	3	8	99.6	100.7	-11	4	1	45.7	46.5	-9	4	4	58.3	62.3	2	4	7	60.7	59.9
3	3	3	8	43.2	38.2	-10	4	1	7.1	8.9	-8	4	4	24.2	23.4	3	4	7	100.9	100.2
4	3	3	8	30.9	32.2	-9	4	1	42.9	41.4	-7	4	4	9.0	5.1	4	4	7	81.9	80.7
5	3	3	8	28.9	31.4	-8	4	1	207.6	215.9	-6	4	4	75.5	73.6	5	4	7	53.1	52.4
6	3	3	8	38.3	35.4	-7	4	1	158.4	161.5	-5	4	4	189.4	190.2	6	4	7	39.9	39.3
7	3	3	8	15.8	0.8	-6	4	1	123.3	126.5	-4	4	4	189.4	190.2	7	4	7	53.6	54.8
8	3	3	8	23.1	18.4	-5	4	1	92.2	92.9	-3	4	4	107.9	102.6	8	4	7	92.9	97.6

-4	3	11	5.9	11.1	9	4	2	88.9	99.5	14	4	5	10.0	11.8	-6	4	10	28.0	29.4
-3	3	11	47.2	45.3	10	4	2	93.2	94.4	-19	4	6	14.2	14.6	-5	4	10	41.4	44.7
-2	3	11	10.6	14.2	11	4	2	27.7	27.6	-18	4	6	6.2	3.7	-4	4	10	6.1	4.7
-1	3	11	5.5	2.0	12	4	2	79.8	72.6	-17	4	6	43.2	43.0	-3	4	10	5.9	11.1
0	3	11	5.6	1.5	13	4	2	82.9	81.9	-16	4	6	22.6	20.3	-2	4	10	44.9	42.2
1	3	11	67.6	62.9	14	4	2	69.9	65.8	-15	4	6	11.8	4.6	-1	4	10	80.9	78.0
2	3	11	22.7	23.2	15	4	2	71.3	61.9	-14	4	6	23.2	22.8	0	4	10	72.1	67.8
3	3	11	56.2	52.9	16	4	2	19.6	17.5	-13	4	6	94.3	98.6	1	4	10	39.4	42.5
4	3	11	15.9	12.1	17	4	2	8.7	4.2	-12	4	6	161.5	167.9	2	4	10	51.0	47.9
-13	3	12	19.2	24.1	19	4	3	66.3	57.5	-11	4	6	83.1	86.2	3	4	10	12.0	13.8
-12	3	12	27.2	29.3	18	4	3	6.8	16.0	-10	4	6	41.2	40.7	4	4	10	36.8	33.1
-11	3	12	97.8	57.3	17	4	3	16.2	14.7	-9	4	6	11.1	13.7	5	4	10	5.7	2.5
-10	3	12	28.6	25.8	16	4	3	59.6	58.1	-8	4	6	46.8	45.6	6	4	10	14.7	5.5
-9	3	12	18.0	15.4	15	4	3	42.8	41.6	-7	4	6	8.2	11.4	6	4	11	7.8	6.6
-8	3	12	6.3	6.3	14	4	3	64.7	58.1	-6	4	6	29.8	26.3	-14	4	11	10.7	17.2
-7	3	12	14.9	11.8	13	4	3	11.9	4.2	-5	4	6	28.6	28.8	-13	4	11	17.1	15.0
-6	3	12	5.5	11.1	12	4	3	6.0	2.2	-4	4	6	65.7	68.7	-12	4	11	26.1	25.6
-5	3	12	59.1	59.4	11	4	3	30.9	30.2	-3	4	6	89.1	87.4	-11	4	11	36.3	38.3
-4	3	12	6.0	9.4	10	4	3	34.5	29.5	-2	4	6	101.9	99.8	-10	4	11	30.5	31.3

H	K	L	FC	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
-8	4	11	91.5	89.1	-13	5	3	19.0	9.2	2	5	6	134.5	135.3	2	6	6	77.6	71.7					
-7	4	11	76.7	76.5	-12	5	3	23.2	80.8	3	5	6	35.0	34.2	3	6	6	71.2	70.4					
-6	4	11	179.8	166.1	-11	5	3	6.7	14.7	4	5	6	23.1	31.5	4	6	6	73.7	71.1					
-5	4	11	21.7	17.3	-10	5	3	51.6	50.7	5	5	6	10.7	15.7	5	6	6	25.7	23.8					
-4	4	11	42.2	42.4	-9	5	3	47.1	44.1	6	5	6	25.4	18.4	6	6	6	20.2	16.8					
-3	4	11	27.9	26.1	-8	5	3	161.1	164.5	7	5	6	6.4	2.3	7	6	6	22.8	22.4					
-2	4	11	24.9	22.9	-7	5	3	17.6	17.6	8	5	6	53.6	59.0	8	6	6	6.2	5.6					
-1	4	11	14.0	10.9	-6	5	3	153.0	165.0	9	5	6	6.8	5.9	9	6	6	10.0	6.9					
0	4	11	16.9	14.9	-5	5	3	20.6	51.4	10	5	6	6.0	2.4	10	6	6	72.6	79.4					
1	4	11	6.1	4.3	-4	5	3	49.6	49.9	11	5	6	21.0	21.3	11	6	6	44.6	50.1					
2	4	11	19.9	18.1	-3	5	3	20.6	20.5	12	5	6	5.8	2.1	12	6	6	99.3	100.4					
3	4	11	54.2	49.6	-2	5	3	37.3	42.6	13	5	6	61.7	66.9	13	6	6	69.2	69.8					
-11	4	12	5.7	3.8	-1	5	3	7.1	2.3	14	5	6	6.0	4.5	14	6	6	10.5	2.4					
-10	4	12	22.5	19.4	0	5	3	25.1	24.6	15	5	6	14.7	4.1	15	6	6	40.7	35.7					
-9	4	12	15.3	12.8	1	5	3	14.4	8.9	16	5	6	5.7	3.9	16	6	6	34.5	32.8					
-8	4	12	15.5	6.2	2	5	3	32.0	29.7	17	5	6	64.9	65.2	17	6	6	5.7	4.0					
-7	4	12	11.4	11.3	3	5	3	25.4	15.4	18	5	6	5.6	9.4	18	6	6	6.8	16.5					
-6	4	12	17.1	18.8	4	5	3	206.2	222.9	19	5	6	88.9	88.6	19	6	6	6.9	8.5					
-5	4	12	10.8	15.1	5	5	3	6.9	15.2	20	5	6	38.0	40.7	20	6	6	34.6	28.5					
-4	4	12	45.8	44.4	6	5	3	154.6	159.4	21	5	6	61.3	60.9	21	6	6	45.8	41.0					
-3	4	12	65.3	62.6	7	5	3	36.2	34.7	22	5	6	115.7	80.9	22	6	6	28.6	26.3					
-2	4	12	97.5	92.9	8	5	3	79.3	78.8	23	5	6	117.4	118.9	23	6	6	79.1	82.6					
1	5	0	79.6	75.6	9	5	3	16.7	12.2	24	5	6	76.0	74.1	24	6	6	110.8	109.6					
2	5	0	150.4	148.9	10	5	3	59.9	55.4	25	5	6	43.7	39.8	25	6	6	72.5	71.5					
3	5	0	28.5	28.9	11	5	3	31.3	28.6	26	5	6	15.4	12.9	26	6	6	152.4	142.3					
4	5	0	149.9	148.2	12	5	3	11.5	3.8	27	5	6	6.4	3.5	27	6	6	15.0	14.4					
5	5	0	28.8	31.0	13	5	3	12.7	10.3	28	5	6	6.5	6.5	28	6	6	22.6	7.3					
6	5	0	19.1	13.2	14	5	3	27.5	27.3	29	5	6	27.2	31.1	29	6	6	6.1	4.2					
7	5	0	8.6	3.0	15	5	3	14.9	8.0	30	5	6	11.3	3.9	30	6	6	70.7	69.0					
8	5	0	86.2	95.7	16	5	4	13.9	15.1	31	5	6	69.1	68.6	31	6	6	24.8	21.3					
9	5	0	12.1	5.1	17	5	4	31.8	28.9	32	5	6	6.7	4.3	32	6	6	12.6	2.1					
10	5	0	83.2	85.4	18	5	4	19.9	13.0	33	5	6	161.1	102.1	33	6	6	34.6	31.2					
11	5	0	22.1	22.8	19	5	4	30.5	23.9	34	5	6	18.2	14.5	34	6	6	5.8	12.2					
12	5	0	112.5	113.3	20	5	4	83.9	81.1	35	5	6	140.2	142.5	35	6	6	68.0	70.2					
13	5	0	21.7	17.3	21	5	4	30.0	21.8	36	5	6	7.5	21.1	36	6	6	140.2	145.8					
14	5	0	104.6	107.1	22	5	4	156.5	162.0	37	5	6	10.0	4.9	37	6	6	118.8	126.8					
15	5	0	30.8	28.9	23	5	4	20.2	17.7	38	5	6	14.6	0.6	38	6	6	89.5	91.2					
16	5	0	10.3	23.0	24	5	4	9.5	1.2	39	5	6	31.4	27.2	39	6	6	49.9	56.0					
17	5	0	15.1	15.2	25	5	4	15.8	18.2	40	5	6	36.0	35.1	40	6	6	62.5	63.4					
18	5	1	14.5	8.2	26	5	4	63.7	66.2	41	5	6	15.1	14.2	41	6	6	51.9	53.0					
19	5	1	84.7	81.1	27	5	4	10.1	4.1	42	5	6	23.6	21.8	42	6	6	67.1	70.1					
20	5	1	6.7	5.8	28	5	4	36.0	32.9	43	5	6	24.4	17.3	43	6	6	6.4	14.2					
21	5	1	54.4	49.2	29	5	4	35.7	32.5	44	5	6	130.1	132.8	44	6	6	13.6	4.5					

13	5	1	7.1	16.4	-4	5	4	75.8	82.7	-11	5	8	8.5	12.3	13	5	12.1	8.1
12	5	1	6.7	7.1	-3	5	4	27.3	25.5	-10	5	8	50.1	48.6	14	6	15.0	24.5
11	5	1	38.9	40.7	-2	5	4	167.5	165.7	-9	5	8	12.4	8.7	15	6	20.5	25.5
10	5	1	71.2	73.8	-1	5	4	81.5	78.1	-8	5	8	31.3	28.8	-16	6	5.6	6.7
9	5	1	29.1	26.3	0	5	4	100.6	99.7	-7	5	8	5.9	3.5	-15	6	6.0	4.2
8	5	1	190.3	189.7	1	5	4	35.2	38.6	-6	5	8	43.6	47.2	-14	6	36.9	90.0
7	5	1	43.2	39.4	2	5	4	41.7	42.5	-4	5	8	15.4	11.1	-13	6	59.2	55.7
6	5	1	65.2	65.8	3	5	4	18.1	25.0	-5	5	8	27.6	23.3	-12	6	95.9	92.4
5	5	1	7.2	4.4	4	5	4	110.7	112.9	-3	5	8	14.5	7.7	-11	6	33.1	32.9
4	5	1	288.6	276.4	5	5	4	25.9	24.5	-2	5	8	108.6	102.8	-10	6	36.6	55.4
3	5	1	6.4	7.6	6	5	4	12.8	7.7	-1	5	8	47.8	48.0	-9	6	47.8	59.4
2	5	1	51.1	50.4	7	5	4	6.9	2.0	0	5	8	118.5	110.8	-8	6	59.7	59.8
1	5	1	25.1	18.8	8	5	4	61.8	61.4	1	5	8	14.6	13.2	-7	6	10.7	4.8
0	5	1	19.0	15.2	9	5	4	17.1	10.4	2	5	8	22.9	24.7	-6	6	6.8	2.4
1	5	1	18.9	4.2	10	5	4	115.9	115.7	3	5	8	23.8	21.6	-5	6	34.7	35.0
2	5	1	100.9	107.3	11	5	4	24.4	20.5	4	5	8	56.4	56.0	-4	6	65.7	63.2
3	5	1	29.1	30.6	12	5	4	25.2	24.8	5	5	8	16.0	17.7	-3	6	67.5	66.1
4	5	1	45.2	42.9	13	5	4	5.6	1.9	6	5	8	10.1	3.2	-2	6	150.3	147.5
5	5	1	44.8	42.1	14	5	4	67.9	68.7	7	5	8	6.3	0.8	-1	6	10.8	10.6
6	5	1	113.1	119.4	-17	5	5	49.5	45.8	8	5	8	20.1	18.0	0	6	39.2	40.5
7	5	1	41.7	40.3	-18	5	5	11.9	9.1	14	5	8	5.4	6.4	1	6	16.7	18.6
8	5	1	199.7	211.3	-16	5	5	40.9	42.2	-15	5	8	15.4	12.6	2	6	47.5	53.3
9	5	1	37.7	37.3	-15	5	5	12.7	3.8	-13	5	8	29.4	29.0	3	6	97.9	97.9
10	5	1	26.7	27.9	-14	5	5	33.5	33.6	-12	5	8	5.9	3.6	4	6	76.1	81.7
11	5	1	19.5	15.9	-13	5	5	7.5	23.5	-11	5	8	8.6	7.4	5	6	47.1	51.5
12	5	1	45.1	45.4	-12	5	5	6.7	17.4	-10	5	8	23.5	27.9	6	6	6.7	6.3
13	5	1	6.9	9.6	-11	5	5	21.7	23.8	-9	5	8	8.6	7.4	7	6	6.3	3.1
14	5	1	38.1	35.0	-10	5	5	33.4	34.6	-8	5	8	148.6	146.1	8	6	54.7	60.3
15	5	1	15.2	12.1	-9	5	5	30.8	31.7	-7	5	8	7.1	19.0	9	6	57.6	59.8
16	5	1	25.5	26.2	-8	5	5	207.6	212.1	-6	5	8	120.3	112.7	10	6	73.0	72.1
17	5	2	17.5	15.0	-7	5	5	34.3	33.0	-5	5	8	6.4	5.9	11	6	13.6	2.8
18	5	2	6.5	8.0	-6	5	5	64.3	62.5	-4	5	8	78.7	74.1	12	6	44.0	44.3
19	5	2	129.5	122.4	-5	5	5	11.0	3.6	-3	5	8	19.6	19.6	13	6	47.0	47.9
14	5	2	6.8	1.0	-4	5	5	192.6	186.3	0	5	8	6.7	16.1	14	6	81.6	79.9
13	5	2	28.5	26.6	-3	5	5	14.3	17.0	1	5	8	10.5	4.5	-16	6	45.4	45.6
12	5	2	43.9	40.8	-2	5	5	66.4	63.3	2	5	8	55.2	47.6	-15	6	28.2	32.1
11	5	2	143.5	140.7	-1	5	5	13.6	7.4	3	5	8	29.5	29.7	-14	6	25.1	22.2
10	5	2	21.5	14.4	0	5	5	13.3	1.3	4	5	8	95.4	90.2	-13	6	25.3	20.4
9	5	2	115.8	112.0	1	5	5	11.8	5.3	5	5	8	7.0	0.0	-12	6	12.3	1.4
8	5	2	20.0	24.2	2	5	5	88.0	91.9	6	5	8	41.4	38.2	-11	6	24.5	20.2
7	5	2	24.7	14.3	3	5	5	37.0	37.4	-13	5	8	20.9	24.2	-10	6	71.4	72.0
6	5	2	7.3	7.4	4	5	5	94.9	99.1	-11	5	8	6.0	2.2	-9	6	51.2	50.6
5	5	2	21.0	20.2	5	5	5	26.0	17.8	-10	5	8	11.2	.0	-8	6	117.6	125.1
4	5	2	27.4	21.6	6	5	5	19.6	21.2	-9	5	8	35.5	37.9	-7	6	98.7	103.6
3	5	2	161.5	161.5	7	5	5	30.5	30.2	-8	5	8	5.6	17.5	-6	6	7.4	9.2
2	5	2	46.4	46.0	8	5	5	137.3	144.5	-7	5	8	5.6	17.5	-5	6	94.9	96.8
1	5	2	12.7	8.6	9	5	5	26.7	26.3	-6	5	8	5.6	0.9	-4	6	127.3	130.1
0	5	2	31.3	30.9	10	5	5	50.0	53.4	-5	5	8	17.4	8.0	-3	6	83.1	96.0
1	5	2	313.1	336.5	11	5	5	18.0	5.8	-4	5	8	19.5	14.1	-2	6	38.3	44.8
2	5	2	27.4	28.6	12	5	5	22.6	22.8	-3	5	8	89.0	83.8	-1	6	7.4	11.0
3	5	2	123.3	128.3	13	5	5	6.1	9.0		5	8	6.8	8.5	0	6	18.0	14.9

3	5	3	43.8	43.5	-17	5	6	11.1	3.7	-2	5	10	114.8	112.9	1	6	21.0	18.4
4	5	2	79.5	90.4	-16	5	6	105.4	109.0	-1	5	10	5.9	0.9	2	6	72.4	92.3
5	5	2	7.6	7.3	-15	5	6	16.5	7.2	0	5	10	53.6	52.1	3	6	26.1	19.7
6	5	2	6.8	15.1	-14	5	6	86.4	87.3	1	5	10	21.6	16.5	4	6	56.5	60.8
7	5	2	6.7	7.6	-13	5	6	39.7	40.7	2	5	10	84.3	81.1	5	6	34.7	35.7
8	5	2	31.7	79.7	-12	5	6	63.4	68.7	3	5	10	6.7	12.8	6	6	79.6	83.4
9	5	2	17.1	18.7	-11	5	6	13.8	5.7	-11	5	11	5.6	7.0	7	6	44.6	48.2
10	5	2	59.5	63.9	-10	5	6	88.0	89.0	-10	5	11	82.1	80.7	8	6	110.3	111.9
11	5	2	24.1	22.1	-9	5	6	13.4	13.9	-9	5	11	24.7	27.6	9	6	28.1	39.2
12	5	2	160.7	154.9	-8	5	6	36.7	28.4	-8	5	11	19.2	16.9	10	6	10.7	17.0
13	5	2	21.2	27.4	-7	5	6	5.4	9.0	-7	5	11	11.8	13.0	11	6	12.4	12.1
14	5	2	50.3	48.9	-6	5	6	5.7	8.3	-6	5	11	41.3	41.6	12	6	18.2	8.3
15	5	2	5.0	7.7	-5	5	6	30.8	26.4	-5	5	11	21.8	21.4	13	6	6.2	9.8
16	5	2	82.2	77.2	-4	5	6	147.3	140.9	-4	5	11	49.1	46.9	-16	6	76.9	69.7
17	5	3	78.9	68.6	-3	5	6	25.1	24.8	-3	5	11	5.0	5.5	-15	6	64.9	61.4
18	5	3	15.4	6.9	-2	5	6	103.1	94.4	-2	5	11	19.5	15.5	-14	6	57.1	50.4
19	5	3	67.4	37.4	-1	5	6	6.9	13.1	-1	5	11	14.0	6.3	-13	6	42.6	42.0
20	5	3	14.9	13.9	0	5	6	194.2	190.7	0	6	0	212.2	205.1	-12	6	58.9	57.3
21	5	3	6.7	7.7	1	5	6	16.5	20.6	1	6	0	130.4	126.2	-11	6	59.9	58.9

H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC	H	K	L	FO	FC
-10	6	4	94.5	86.0	-1	6	8	6.4	1.8	0	7	3	11.7	2.9	9	8	0	20.4	22.4
-9	6	4	27.2	25.0	6	8	59.6	55.5	1.8	1	7	3	13.0	31.1	10	8	0	6.8	7.1
-8	6	4	6.8	17.0	1	6	91.7	84.6	84.6	2	7	3	7.0	7.6	-10	8	1	6.8	10.1
-7	6	4	12.8	5.9	2	6	72.9	70.1	70.1	3	7	3	40.6	52.7	-9	8	1	27.3	29.6
-6	6	4	30.7	27.7	3	6	16.1	4.7	4.7	4	7	3	22.4	24.1	-8	8	1	36.8	33.1
-5	6	4	15.4	17.4	4	6	6.0	1.8	1.8	5	7	3	131.4	141.8	-7	8	1	104.8	98.4
-4	6	4	105.8	97.3	5	6	13.2	9.4	9.4	6	7	3	47.1	46.9	-6	8	1	14.2	19.7
-3	6	4	91.2	54.4	-12	6	26.7	24.8	24.8	7	7	3	16.2	9.5	-5	8	1	58.9	55.2
-2	6	4	18.2	10.0	-11	6	45.9	44.7	44.7	8	7	3	13.5	11.6	-4	8	1	10.4	3.0
-1	6	4	66.1	64.3	-10	6	68.2	66.5	66.5	9	7	3	57.7	56.7	-3	8	1	35.0	31.0
0	6	4	142.8	153.3	-9	6	5.6	5.3	5.3	10	7	3	35.5	35.2	-2	8	1	5.9	4.5
1	6	4	129.5	140.3	-8	6	6.2	12.0	12.0	11	7	3	15.4	8.4	-1	8	1	26.3	22.3
2	6	4	57.7	102.5	-7	6	29.0	29.8	29.8	-13	7	4	89.9	82.3	0	8	1	5.4	1.0
3	6	4	24.2	20.9	-6	6	70.4	67.2	67.2	-12	7	4	27.6	31.4	1	8	1	13.3	9.2
4	6	4	21.9	23.6	-5	6	15.8	14.2	14.2	-11	7	4	64.2	64.4	2	8	1	17.7	12.0
5	6	4	7.1	14.7	-4	6	55.1	51.4	51.4	-10	7	4	14.2	2.5	3	8	1	65.9	62.5
6	6	4	6.7	4.0	-3	6	23.7	22.5	22.5	-9	7	4	39.7	39.3	4	8	1	37.3	40.7
7	6	4	22.7	23.0	-2	6	6.2	0.3	0.3	-8	7	4	7.0	13.7	5	8	1	105.9	105.1
8	6	4	37.9	36.2	-1	6	8.9	1.4	1.4	-7	7	4	7.2	4.4	6	8	1	5.9	6.8
9	6	4	13.0	11.4	0	6	27.9	23.8	23.8	-6	7	4	17.8	8.9	7	8	1	8.1	2.5
10	6	4	31.7	33.7	1	6	24.8	23.9	23.9	-5	7	4	7.0	10.0	8	8	1	35.9	32.3
11	6	4	25.9	27.5	2	6	18.8	18.5	18.5	-4	7	4	7.5	3.8	9	8	2	57.1	62.4
12	6	4	95.4	91.8	3	6	5.6	4.7	4.7	-3	7	4	83.6	82.6	-10	8	2	14.4	4.9
-1	6	5	5.2	51.1	4	6	5.6	5.3	5.3	-2	7	4	69.2	76.5	-9	8	2	45.6	41.8
-15	6	5	5.9	14.3	-8	6	6.4	2.2	2.2	-1	7	4	62.8	74.7	-8	8	2	21.1	14.7
-14	6	5	16.7	10.0	-7	6	5.6	3.6	3.6	0	7	4	35.9	40.6	-7	8	2	7.0	9.8
-13	6	5	12.2	10.5	-6	6	38.3	36.8	36.8	1	7	4	13.9	24.8	-6	8	2	12.6	5.9
-12	6	5	40.7	41.1	-5	6	8.4	7.9	7.9	2	7	4	45.3	48.6	-5	8	2	10.6	8.1
-11	6	5	53.4	57.2	-4	6	30.9	28.4	28.4	3	7	4	52.7	56.5	-4	8	2	30.7	29.2
-10	6	5	63.9	66.3	-3	6	21.9	17.7	17.7	4	7	4	7.1	11.5	-3	8	2	90.0	85.6
-9	6	5	42.0	46.2	-2	6	51.8	51.1	51.1	5	7	4	25.6	36.9	-2	8	2	22.1	20.6
-8	6	5	52.4	52.1	-1	6	16.0	14.5	14.5	6	7	4	12.9	2.3	-1	8	2	79.1	77.8
-7	6	5	67.3	66.1	1	6	36.2	35.7	35.7	7	7	4	5.8	5.3	0	8	2	11.0	3.1
-6	6	5	133.4	133.5	2	6	79.6	75.8	75.8	8	7	4	28.4	25.0	1	8	2	23.7	26.8
-5	6	5	23.5	20.2	3	6	97.8	95.5	95.5	9	7	4	73.2	69.3	2	8	2	13.8	20.0
-4	6	5	64.5	61.9	4	6	14.6	9.9	9.9	-13	7	5	13.2	8.0	3	8	2	72.3	75.6
-3	6	5	22.5	26.0	5	6	33.7	38.9	38.9	-12	7	5	13.6	7.2	4	8	2	32.5	28.5
-2	6	5	21.9	19.7	6	6	9.9	2.1	2.1	-11	7	5	6.5	4.7	5	8	2	14.0	18.5
-1	6	5	7.5	5.7	7	6	6.4	13.0	13.0	-10	7	5	43.1	48.4	6	8	2	6.7	5.6
0	6	5	21.2	25.7	8	6	25.1	26.4	26.4	-9	7	5	69.2	72.6	7	8	2	17.2	11.8
1	6	5	36.7	35.4	9	6	68.8	74.0	74.0	-8	7	5	34.2	32.8	8	8	2	5.9	5.7
2	6	5	31.8	28.5	10	6	15.8	16.6	16.6	-7	7	5	104.3	104.4	10	8	3	21.2	16.9
3	6	5	27.6	24.0	11	6	15.2	14.3	14.3	-6	7	5	5.5	1.8	-9	8	3	78.2	81.1

4	6	79.7	95.7	12	7	7	0	6.5	15.8	-5	7	5	64.6	62.1	-8	8	2	35.7	22.2
5	6	102.2	107.4	13	7	7	0	72.6	74.9	-4	7	5	7.4	8.0	-7	8	3	52.8	49.7
6	6	118.2	117.5	-13	7	7	1	15.8	15.1	-3	7	5	95.3	88.4	-6	8	3	7.8	8.5
7	6	13.9	5.9	-12	7	7	1	7.2	4.8	-2	7	5	16.4	17.1	-5	8	3	66.9	66.6
8	6	6.2	1.8	-11	7	7	1	16.8	12.6	-1	7	5	6.9	7.2	-4	8	3	48.6	47.2
9	6	38.6	30.1	-10	7	7	1	49.0	50.6	0	7	5	14.0	8.7	-3	8	3	74.6	70.9
10	6	44.9	38.9	-9	7	7	1	85.6	88.1	1	7	5	18.3	25.6	-2	8	3	5.5	1.0
11	6	13.3	12.7	-8	7	7	1	11.0	13.4	2	7	5	42.0	47.9	-1	8	3	9.0	1.3
12	6	6.7	12.4	-7	7	7	1	56.9	57.8	3	7	5	35.0	61.3	0	8	3	14.9	2.6
13	6	49.0	55.0	-6	7	7	1	36.8	31.4	4	7	5	36.5	33.0	1	8	3	25.5	29.0
14	6	39.7	44.0	-5	7	7	1	134.9	133.3	5	7	5	32.0	31.8	2	8	3	12.7	1.6
15	6	95.5	98.3	-4	7	7	1	17.2	20.5	6	7	5	43.7	42.4	3	8	3	58.6	63.9
-1	6	63.4	65.7	-3	7	7	1	104.4	101.7	7	7	5	52.9	56.3	4	8	3	6.7	2.5
-2	6	18.7	17.5	-2	7	7	1	17.4	20.2	8	7	5	33.3	26.5	5	8	3	7.0	3.7
-3	6	18.5	21.7	-1	7	7	1	5.3	9.5	-12	7	6	13.5	9.8	6	8	3	15.2	23.3
-4	6	26.9	25.6	0	7	7	1	5.7	5.4	-11	7	6	61.3	60.1	7	8	3	74.1	77.7
-5	6	16.6	2.6	1	7	7	1	39.6	39.9	-10	7	6	25.5	27.6	-9	8	4	6.3	2.1
-6	6	30.0	32.2	2	7	7	1	47.9	48.7	-9	7	6	33.6	35.2	-8	8	4	32.5	34.3
-7	6	6.5	6.0	3	7	7	1	44.1	46.6	-8	7	6	16.5	7.3	-7	8	4	7.7	0.3
-8	6	11.8	7.7	4	7	7	1	11.1	7.0	-7	7	6	8.6	2.3	-6	8	4	11.1	2.0
-9	6	55.1	50.9	5	7	7	1	14.1	17.1	-6	7	6	14.1	24.8	-5	8	4	7.1	16.6
-10	6	126.3	117.6	6	7	7	1	78.8	82.4	-5	7	6	37.0	37.9	-4	8	4	41.7	42.0
-11	6	24.8	25.7	7	7	7	1	101.6	108.7	-4	7	6	36.2	36.9	-3	8	4	14.1	22.1
-12	6	90.4	89.5	8	7	7	1	25.7	25.8	-3	7	6	109.0	102.7	-2	8	4	51.1	58.2
-13	6	44.8	47.2	9	7	7	1	65.3	81.6	-2	7	6	6.5	3.1	-1	8	4	22.8	20.5
-14	6	24.2	24.0	10	7	7	1	14.2	17.7	-1	7	6	36.3	33.3	0	8	4	43.7	50.0
-15	6	10.6	16.4	11	7	7	1	27.9	25.8	0	7	6	22.9	13.9	1	8	4	57.6	56.6
0	6	46.8	48.0	12	7	7	1	11.1	3.1	1	7	6	127.9	129.8	1	8	4	87.4	101.6
1	6	35.4	36.7	-14	7	7	2	28.0	23.1	2	7	6	33.7	32.5	2	8	4	7.3	7.3
2	6	12.8	4.0	-13	7	7	2	55.0	52.1	3	7	6	30.1	18.9	3	8	4	20.8	22.0
3	6	5.9	8.6	-12	7	7	2	7.7	17.1	4	7	6	12.3	12.4	4	8	4	25.3	23.8
4	6	34.7	31.0	-11	7	7	2	82.5	85.1	5	7	6	11.1	14.5	5	8	4	7.3	3.1
5	6	42.0	41.5	-10	7	7	2	44.3	39.8	6	7	6	5.9	1.6	6	8	4	8.2	3.1
6	6	11.9	15.3	-8	7	7	2	7.7	3.5	-11	7	7	62.6	60.9	6	8	4	18.5	14.7
7	6	5.5	4.4	-7	7	7	2	11.4	9.4	-10	7	7	35.3	35.7	-8	8	5	33.0	33.9
8	6	16.0	16.1	-6	7	7	2	25.9	25.2	-9	7	7	17.9	13.7	-7	8	5	73.3	70.0
9	6	20.6	20.6	-5	7	7	2	45.8	48.2	-8	7	7	19.8	19.7	-6	8	5	11.5	5.0
10	6	24.3	26.3	-4	7	7	2	19.8	20.0	-7	7	7	60.8	62.1	-5	8	5	77.1	71.4
11	6	33.6	34.6	-3	7	7	2	86.2	84.6	-6	7	7	59.3	56.3	-4	8	5	6.3	5.3
12	6	25.6	29.3	-2	7	7	2	30.4	29.8	-4	7	7	33.6	26.2	-3	8	5	7.1	5.3
13	6	121.7	121.4	-1	7	7	2	111.5	115.2	-5	7	7	63.4	58.9	-2	8	5	7.1	9.7
14	6	111.5	109.6	0	7	7	2	38.2	38.6	-3	7	7	25.3	24.7	-2	8	5	14.7	6.5
15	6	54.2	54.2	1	7	7	2	157.0	162.2	-2	7	7	18.8	10.3	-1	8	5	7.0	4.9
-1	6	67.4	63.0	2	7	7	2	41.1	41.2	-1	7	7	10.9	6.9	0	8	5	22.8	26.1
-2	6	32.4	24.2	3	7	7	2	26.0	20.5	0	7	7	12.9	14.9	1	8	5	7.6	13.4
-3	6	74.6	65.2	4	7	7	2	6.1	1.3	1	7	7	41.1	38.0	2	8	5	14.7	20.1
-4	6	28.5	35.9	5	7	7	2	23.5	27.4	2	7	7	17.4	13.9	3	8	5	25.8	28.3
-5	6	15.9	4.5	6	7	7	2	15.9	15.8	3	7	7	7.0	3.1	4	8	6	5.7	0.2
-6	6	11.3	1.2	7	7	7	2	28.2	29.0	4	7	7	9.4	9.5	5	8	6	6.5	3.8
-7	6	6.7	5.6	8	7	7	2	15.0	9.8	-9	7	7	15.7	6.6	6	8	6	13.7	15.1
-8	6	68.8	64.4	-9	7	7	2	25.6	30.0	-8	7	7	6.1	2.1	-4	8	6	27.8	20.6

