

APPENDIX J

RAW TO SCALED SCORE LOOK-UP TABLES

Table J-1. Raw to Scaled Score Look-Up Table—High School Biology

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
0	-6	0	10	200	200	1	1
1	-6	0	10	200	200	1	1
2	-6	0	10	200	202	1	1
3	-6	0	10	200	202	1	1
4	-6	0	10	200	204	1	1
5	-6	0	10	200	204	1	1
6	-6	0	10	200	206	1	1
7	-6	0	10	200	206	1	1
8	-6	0.01	10	200	208	1	1
9	-5.814	0.02	10	200	208	1	1
10	-4.958	0.06	10	200	210	1	1
11	-4.101	0.2	10	200	210	1	1
12	-3.159	0.92	5.3	204	210	1	1
13	-2.7	1.96	3.6	208	214	1	1
14	-2.404	3.13	2.9	210	214	1	1
15	-2.182	4.34	2.4	212	216	1	1
16	-2.003	5.52	2.2	214	216	1	1
17	-1.851	6.65	2	216	218	1	1
18	-1.717	7.71	2.5	218	218	1	1
19	-1.597	8.69	3.3	218	218	1	1
20	-1.486	9.61	4	220	220	2	2
21	-1.383	10.44	4.8	222	220	2	2
22	-1.286	11.2	5.5	224	220	2	2
23	-1.193	11.88	6.2	226	222	2	2
24	-1.104	12.5	6.4	228	224	2	2
25	-1.018	13.05	6.3	230	226	2	2
26	-0.934	13.54	6.2	232	228	2	2
27	-0.852	13.96	6.1	234	230	2	2
28	-0.771	14.32	5.8	236	232	2	2
29	-0.692	14.62	5.5	236	234	2	2
30	-0.613	14.85	5.2	238	236	2	2
31	-0.534	15.02	4.9	240	238	3	2
32	-0.455	15.12	4.7	242	240	3	3
33	-0.376	15.17	4.4	242	242	3	3
34	-0.296	15.15	4.1	244	242	3	3
35	-0.215	15.09	4.2	246	244	3	3
36	-0.134	14.99	4.2	246	246	3	3
37	-0.052	14.85	4.2	248	246	3	3
38	0.032	14.68	4.2	250	248	3	3
39	0.118	14.48	4.2	250	250	3	3
40	0.206	14.24	4.3	252	250	3	3
41	0.295	13.95	4.3	254	252	3	3
42	0.387	13.61	4.4	256	254	3	3
43	0.483	13.2	4.2	256	254	3	3
44	0.581	12.71	3.9	258	256	3	3
45	0.684	12.16	3.6	260	258	4	3

continued

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
46	0.791	11.55	3.3	260	260	4	4
47	0.903	10.89	2.9	262	260	4	4
48	1.022	10.21	2.7	262	262	4	4
49	1.147	9.52	2.8	264	262	4	4
50	1.281	8.84	2.9	266	264	4	4
51	1.423	8.19	3	266	266	4	4
52	1.577	7.56	3.1	268	266	4	4
53	1.743	6.96	3.3	270	268	4	4
54	1.924	6.39	3.4	270	270	4	4
55	2.124	5.81	3.6	272	272	4	4
56	2.352	5.16	3.8	274	276	4	4
57	2.62	4.34	4.1	276	280	4	4
58	2.966	3.24	4.8	280	280	4	4
59	3.515	1.72	6.6	280	280	4	4
60	4	0.89	9.2	280	280	4	4

Note. Theta below -6 is truncated to -6.

Table J-2. Raw to Scaled Score Look-Up Table—High School Chemistry

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
0	-6	0	10	200	200	1	1
1	-6	0	10	200	200	1	1
2	-6	0	10	202	202	1	1
3	-6	0	10	202	202	1	1
4	-6	0	10	204	204	1	1
5	-6	0	10	204	204	1	1
6	-6	0	10	204	204	1	1
7	-6	0	10	206	206	1	1
8	-6	0.02	10	206	206	1	1
9	-4.271	0.16	10	206	206	1	1
10	-2.509	1.13	4.2	210	208	1	1
11	-1.949	2.52	2.8	212	212	1	1
12	-1.627	3.99	2.2	214	214	1	1
13	-1.398	5.48	1.9	214	214	1	1
14	-1.218	7.03	1.7	216	216	1	1
15	-1.069	8.67	1.5	216	216	1	1
16	-0.942	10.35	1.4	216	216	1	1
17	-0.83	12.03	1.3	216	218	1	1
18	-0.729	13.66	1.2	218	218	1	1
19	-0.637	15.22	1.1	218	218	1	1
20	-0.552	16.68	1.1	218	218	1	1
21	-0.473	18.03	1	218	218	1	1
22	-0.398	19.28	1	218	218	1	1
23	-0.327	20.43	1.4	220	220	2	2
24	-0.258	21.49	2.4	220	220	2	2
25	-0.192	22.46	3.3	220	220	2	2
26	-0.129	23.35	4.2	220	220	2	2
27	-0.066	24.18	5.1	222	222	2	2
28	-0.006	24.93	6	224	224	2	2
29	0.054	25.61	6.9	226	226	2	2
30	0.112	26.22	7	228	228	2	2
31	0.17	26.75	6.9	230	230	2	2
32	0.228	27.21	6.9	232	232	2	2
33	0.285	27.57	6.6	234	234	2	2
34	0.342	27.83	6.3	238	236	2	2
35	0.399	28	6.1	240	238	3	2
36	0.456	28.05	5.9	240	240	3	3
37	0.514	28	5.6	242	242	3	3
38	0.572	27.83	5.4	244	244	3	3
39	0.632	27.56	5.3	246	244	3	3
40	0.692	27.18	5.3	248	246	3	3
41	0.754	26.7	5.3	250	248	3	3
42	0.817	26.13	5.4	250	250	3	3
43	0.882	25.47	5.5	252	252	3	3
44	0.949	24.74	5.5	254	254	3	3
45	1.019	23.95	5	256	256	3	3

continued

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
46	1.091	23.1	4.5	258	258	3	3
47	1.167	22.19	3.9	260	260	4	4
48	1.246	21.24	3.4	262	260	4	4
49	1.329	20.23	2.8	262	262	4	4
50	1.417	19.14	2.5	262	262	4	4
51	1.511	17.97	2.6	264	264	4	4
52	1.613	16.69	2.6	266	264	4	4
53	1.724	15.26	2.8	266	266	4	4
54	1.847	13.65	2.9	268	266	4	4
55	1.989	11.81	3.1	270	268	4	4
56	2.157	9.7	3.5	270	270	4	4
57	2.369	7.33	4	274	272	4	4
58	2.663	4.86	4.9	276	276	4	4
59	3.152	2.46	6.9	280	280	4	4
60	4	0.64	10	280	280	4	4

Note. Theta below -6 is truncated to -6.

Table J-3. Raw to Scaled Score Look-Up Table—High School Introductory Physics

Raw Score	<i>Theta</i>	<i>Information</i>	<i>SE (Scaled Score)</i>	Scale Score		Achievement Levels	
				2019	2018	2019	2018
0	-6	0	10	200	200	1	1
1	-6	0	10	200	200	1	1
2	-6	0	10	200	202	1	1
3	-6	0	10	200	202	1	1
4	-6	0	10	200	204	1	1
5	-6	0	10	200	204	1	1
6	-6	0.01	10	200	206	1	1
7	-6	0.01	10	200	206	1	1
8	-6	0.02	10	200	208	1	1
9	-5.293	0.04	10	200	208	1	1
10	-4.315	0.16	10	200	210	1	1
11	-3.208	1.1	5.3	204	210	1	1
12	-2.717	2.54	3.5	208	212	1	1
13	-2.423	3.99	2.8	210	212	1	1
14	-2.207	5.39	2.4	212	214	1	1
15	-2.034	6.74	2.1	214	216	1	1
16	-1.888	8.06	2	216	218	1	1
17	-1.759	9.32	1.8	216	218	1	1
18	-1.644	10.52	2.3	218	218	1	1
19	-1.538	11.64	3	218	218	1	1
20	-1.44	12.67	3.8	220	220	2	2
21	-1.348	13.59	4.5	222	220	2	2
22	-1.261	14.4	5.2	224	222	2	2
23	-1.178	15.1	5.9	226	224	2	2
24	-1.097	15.7	6.2	228	226	2	2
25	-1.019	16.21	6.1	230	228	2	2
26	-0.943	16.64	6	232	230	2	2
27	-0.868	17.01	5.9	232	232	2	2
28	-0.795	17.32	5.8	234	234	2	2
29	-0.723	17.59	5.6	236	236	2	2
30	-0.651	17.84	5.4	238	238	2	2
31	-0.581	18.07	5.2	240	240	3	3
32	-0.511	18.29	5	242	242	3	3
33	-0.441	18.5	4.8	242	242	3	3
34	-0.371	18.69	4.6	244	244	3	3
35	-0.302	18.87	4.5	246	246	3	3
36	-0.233	19.02	4.5	246	246	3	3
37	-0.163	19.14	4.5	248	248	3	3
38	-0.092	19.2	4.5	250	250	3	3
39	-0.022	19.19	4.5	250	252	3	3
40	0.05	19.1	4.5	252	252	3	3
41	0.124	18.92	4.5	254	254	3	3
42	0.198	18.64	4.6	256	256	3	3
43	0.275	18.27	4.2	256	256	3	3
44	0.354	17.8	3.8	258	258	3	3
45	0.436	17.25	3.3	260	260	4	4

continued

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
46	0.521	16.62	2.9	260	260	4	4
47	0.61	15.92	2.4	262	262	4	4
48	0.704	15.17	2	262	262	4	4
49	0.803	14.37	2.1	262	264	4	4
50	0.909	13.51	2.1	264	264	4	4
51	1.023	12.57	2.2	264	266	4	4
52	1.146	11.55	2.3	266	266	4	4
53	1.283	10.41	2.4	266	268	4	4
54	1.437	9.16	2.6	268	270	4	4
55	1.615	7.8	2.8	270	272	4	4
56	1.829	6.35	3.1	270	274	4	4
57	2.099	4.87	3.5	272	276	4	4
58	2.468	3.35	4.3	276	280	4	4
59	3.066	1.76	5.9	280	280	4	4
60	4	0.52	10	280	280	4	4

Note. Theta below -6 is truncated to -6.

Table J-4. Raw to Scaled Score Look-Up Table—High School Technology/Engineering

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
0	-4.229	0.25	10	200	200	1	1
1	-2.79	2.65	4.5	202	202	1	1
2	-2.361	5.1	3.3	206	206	1	1
3	-2.101	7.37	2.7	208	208	1	1
4	-1.91	9.49	2.4	208	210	1	1
5	-1.757	11.47	2.2	210	210	1	1
6	-1.628	13.32	2	210	212	1	1
7	-1.515	15.05	1.9	212	212	1	1
8	-1.415	16.67	1.8	212	212	1	1
9	-1.324	18.18	1.7	212	214	1	1
10	-1.24	19.6	1.7	214	214	1	1
11	-1.162	20.92	1.6	214	214	1	1
12	-1.088	22.15	1.6	214	216	1	1
13	-1.019	23.29	1.5	216	216	1	1
14	-0.952	24.34	1.5	216	216	1	1
15	-0.889	25.31	1.5	216	216	1	1
16	-0.828	26.2	1.4	216	216	1	1
17	-0.768	27.01	1.4	218	218	1	1
18	-0.711	27.74	1.4	218	218	1	1
19	-0.655	28.38	1.4	218	218	1	1
20	-0.6	28.95	1.4	218	218	1	1
21	-0.547	29.44	1.4	218	218	1	1
22	-0.494	29.85	2.1	220	220	2	2
23	-0.442	30.18	2.8	220	220	2	2
24	-0.391	30.44	3.5	220	220	2	2
25	-0.339	30.61	4.2	220	222	2	2
26	-0.289	30.71	4.9	222	224	2	2
27	-0.238	30.72	5.6	224	226	2	2
28	-0.188	30.66	6.3	226	228	2	2
29	-0.137	30.52	6.4	228	230	2	2
30	-0.086	30.3	6.4	230	230	2	2
31	-0.035	30	6.4	232	232	2	2
32	0.016	29.63	6.5	234	234	2	2
33	0.069	29.17	6.1	236	236	2	2
34	0.122	28.64	5.7	238	238	2	2
35	0.175	28.04	5.3	240	240	3	3
36	0.23	27.36	4.9	240	240	3	3
37	0.286	26.6	4.5	242	242	3	3
38	0.344	25.78	4	242	244	3	3
39	0.403	24.89	3.6	244	244	3	3
40	0.465	23.93	3.7	244	246	3	3
41	0.528	22.9	3.8	246	246	3	3
42	0.595	21.82	3.9	248	248	3	3
43	0.664	20.69	4	248	248	3	3
44	0.737	19.51	4.1	250	250	3	3
45	0.814	18.29	4.3	252	252	3	3

continued

Raw Score	Theta	Information	SE (Scaled Score)	Scale Score		Achievement Levels	
				2019	2018	2019	2018
46	0.895	17.04	4.4	252	254	3	3
47	0.982	15.76	4.6	254	254	3	3
48	1.076	14.48	4.7	256	256	3	3
49	1.177	13.2	4.5	258	258	3	3
50	1.287	11.93	4.4	260	260	4	4
51	1.408	10.69	4.2	262	262	4	4
52	1.541	9.5	4.1	262	264	4	4
53	1.691	8.37	4.1	264	264	4	4
54	1.86	7.3	4.4	266	266	4	4
55	2.053	6.3	4.7	268	268	4	4
56	2.28	5.35	5.1	272	272	4	4
57	2.554	4.41	5.6	274	274	4	4
58	2.906	3.38	6.4	278	278	4	4
59	3.433	2.05	8.2	280	280	4	4
60	4	1	10	280	280	4	4

Note. Theta below -6 is truncated to -6.