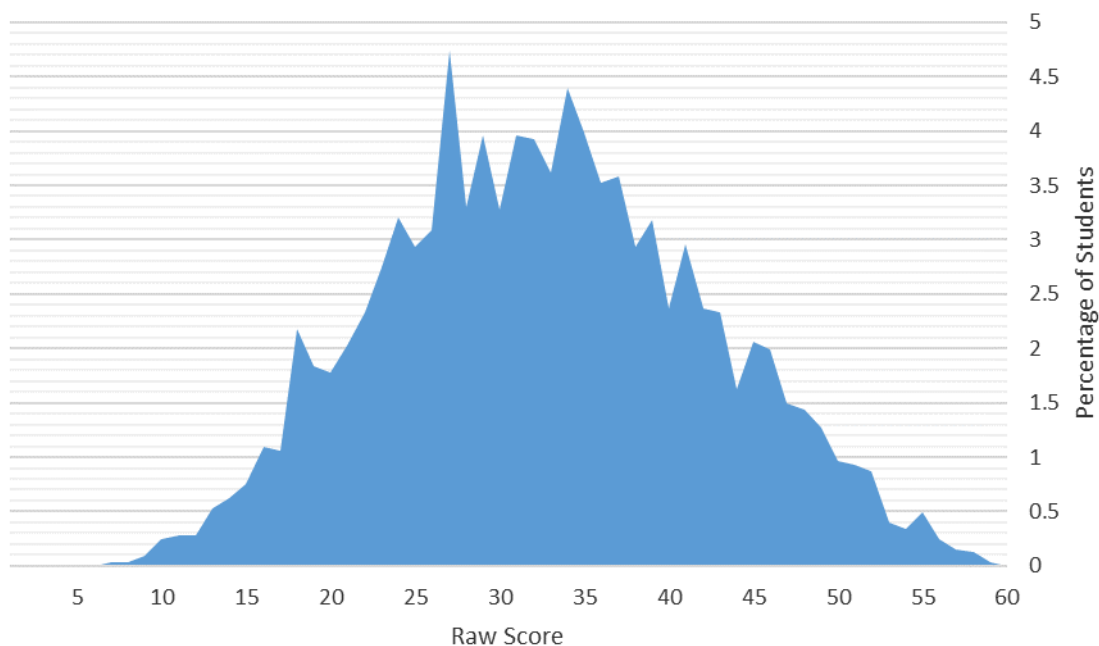


American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14): General
Chemistry Subtest

Score	Percentile	Score	Percentile	Score	Percentile
60	100	34	58	8	0
59	100	33	54	7	0
58	100	32	50	6	0
57	100	31	46	5	0
56	100	30	42	4	0
55	99	29	39	3	0
54	99	28	35	2	0
53	99	27	32	1	0
52	98	26	27	0	0
51	97	25	24		
50	96	24	21		
49	95	23	18		
48	94	22	15		
47	93	21	13		
46	91	20	11		
45	89	19	9		
44	87	18	7		
43	86	17	5		
42	83	16	4		
41	81	15	3		
40	78	14	2		
39	76	13	1		
38	72	12	1		
37	69	11	1		
36	66	10	0		
35	62	9	0		

Mean	32.7
Std. deviation	9.6
Median	32
KR-21 reliability	0.82
Std error/meas	4.04

GB14: General Chemistry Subtest
 based on the scores of 3210 students from 26 different institutions

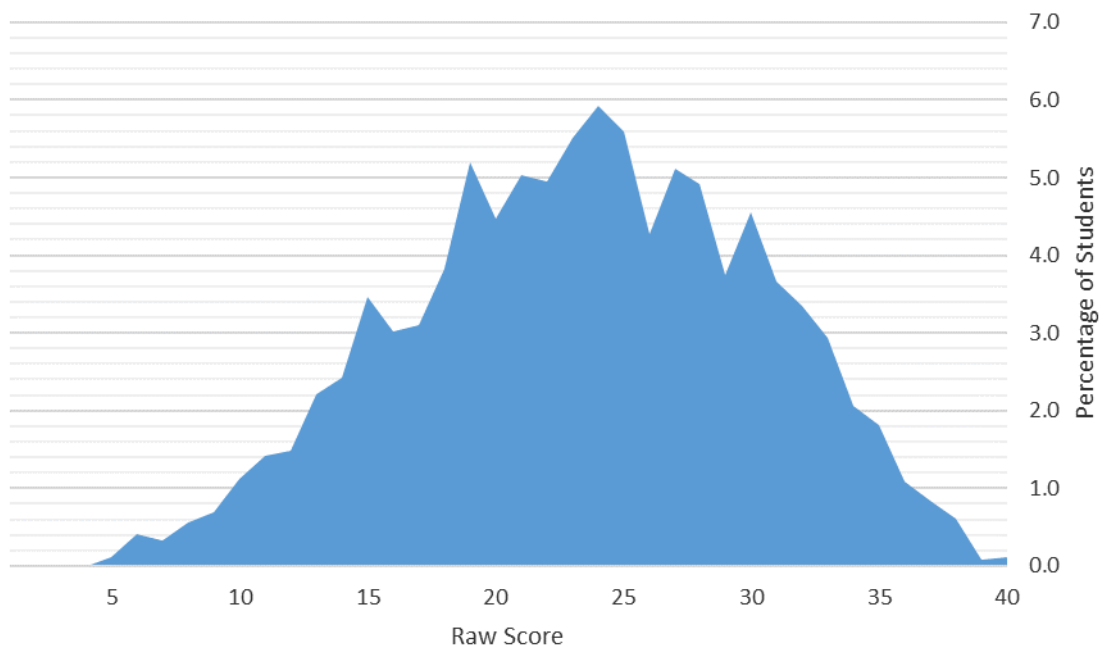


American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14): General
Chemistry Subtest – Part A

Score	Percentile	Score	Percentile
40	100	14	11
39	100	13	8
38	100	12	6
37	99	11	5
36	98	10	3
35	97	9	2
34	95	8	1
33	93	7	1
32	90	6	1
31	87	5	0
30	83	4	0
29	79	3	0
28	75	2	0
27	70	1	0
26	65	0	0
25	61		
24	55		
23	49		
22	44		
21	39		
20	34		
19	29		
18	24		
17	20		
16	17		
15	14		

Mean	23.4
Std. deviation	6.8
Median	24
KR-21 reliability	0.68
Std error/meas	3.89

GB14: General Chemistry Subtest - Part A
 based on the scores of 2483 students from 18 different institutions

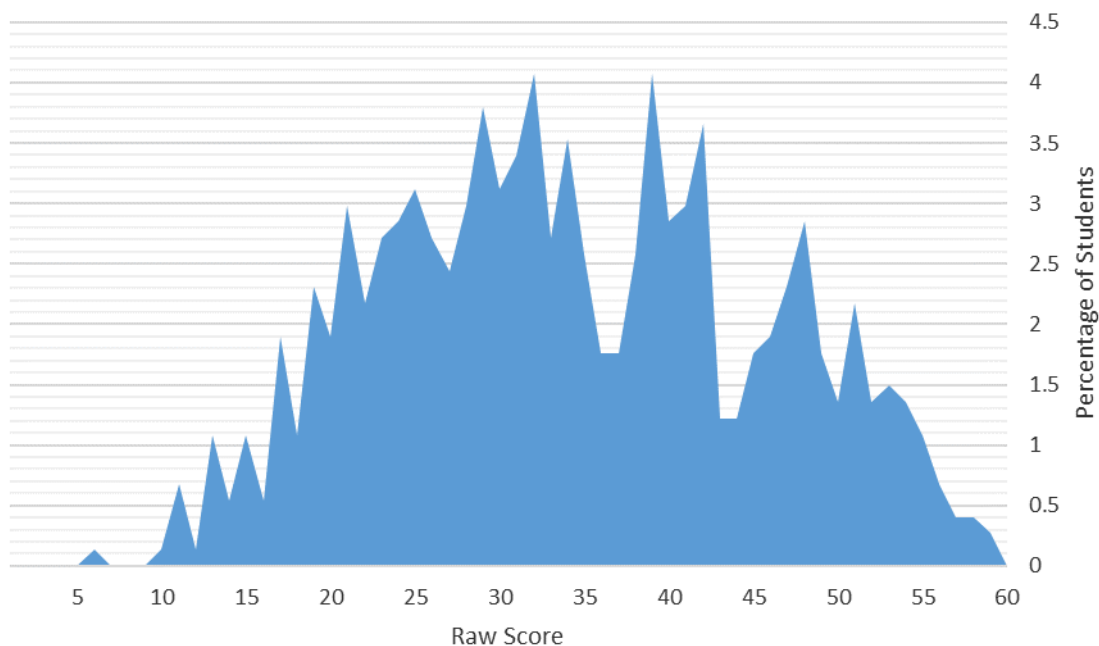


American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14): Organic
Chemistry Subtest

Score	Percentile	Score	Percentile	Score	Percentile
60	100	34	54	8	0
59	100	33	51	7	0
58	100	32	48	6	0
57	99	31	44	5	0
56	99	30	40	4	0
55	98	29	37	3	0
54	97	28	34	2	0
53	96	27	31	1	0
52	94	26	28	0	0
51	93	25	25		
50	91	24	22		
49	89	23	19		
48	88	22	17		
47	85	21	15		
46	82	20	12		
45	81	19	10		
44	79	18	7		
43	78	17	6		
42	76	16	4		
41	73	15	4		
40	70	14	3		
39	67	13	2		
38	63	12	1		
37	60	11	1		
36	58	10	0		
35	57	9	0		

Mean	40.6
Std. deviation	12.1
Median	43
KR-21 reliability	0.90
Std error/meas	3.90

GB14: Organic Chemistry Subtest
 based on the scores of 737 students from 14 different institutions

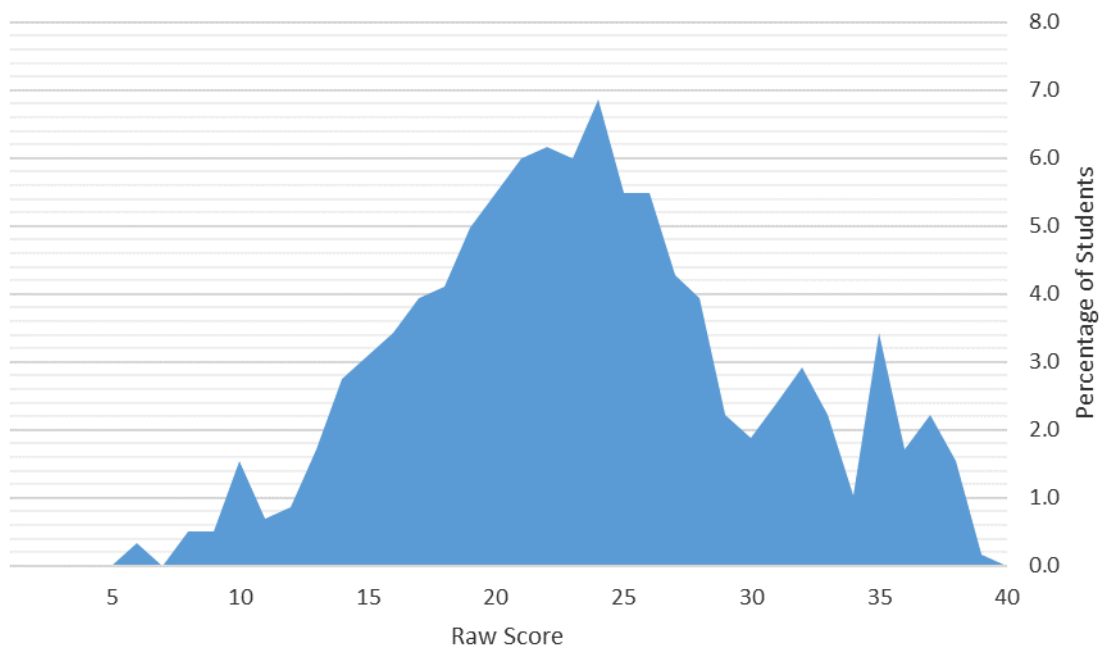


American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14): Organic
Chemistry Subtest – Part A

Score	Percentile	Score	Percentile
40	100	14	9
39	100	13	6
38	100	12	4
37	98	11	4
36	96	10	3
35	94	9	1
34	91	8	1
33	90	7	0
32	88	6	0
31	85	5	0
30	82	4	0
29	80	3	0
28	78	2	0
27	74	1	0
26	70	0	0
25	64		
24	59		
23	52		
22	46		
21	40		
20	34		
19	28		
18	23		
17	19		
16	15		
15	12		

Mean	28.7
Std. deviation	7.8
Median	30
KR-21 reliability	0.74
Std error/meas	4.04

GB14: Organic Chemistry Subtest - Part A
 based on the scores of 583 students from 8 different institutions

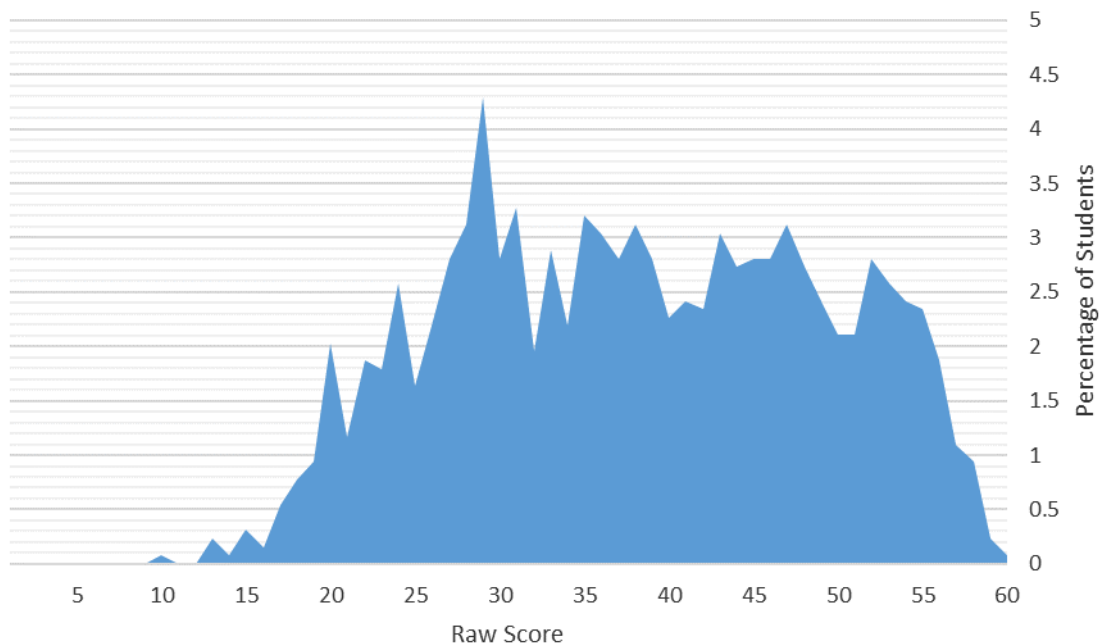


**American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14):
Biochemistry Subtest**

Score	Percentile	Score	Percentile	Score	Percentile
60	100	34	40	8	0
59	100	33	38	7	0
58	100	32	35	6	0
57	99	31	33	5	0
56	98	30	29	4	0
55	96	29	27	3	0
54	93	28	22	2	0
53	91	27	19	1	0
52	88	26	16	0	0
51	86	25	14		
50	84	24	13		
49	81	23	10		
48	79	22	8		
47	76	21	6		
46	73	20	5		
45	70	19	3		
44	68	18	2		
43	65	17	1		
42	62	16	1		
41	59	15	1		
40	57	14	0		
39	55	13	0		
38	52	12	0		
37	49	11	0		
36	46	10	0		
35	43	9	0		

Mean	38.7
Std. deviation	11.0
Median	39
KR-21 reliability	0.87
Std error/meas	3.98

GB14: Biochemistry Subtest
based on the scores of 1373 students from 16 different institutions



**American Chemical Society Division of Chemical Education
Composite Norms – 2014 General-Organic-Biochemistry Exam (GB14):
Biochemistry Subtest – Part A**

Score	Percentile	Score	Percentile
40	100	14	5
39	99	13	4
38	97	12	2
37	94	11	1
36	90	10	1
35	85	9	0
34	81	8	0
33	78	7	0
32	74	6	0
31	70	5	0
30	65	4	0
29	61	3	0
28	56	2	0
27	53	1	0
26	48	0	0
25	45		
24	39		
23	35		
22	31		
21	27		
20	23		
19	20		
18	16		
17	12		
16	9		
15	7		

Mean	26.7
Std. deviation	7.4
Median	27
KR-21 reliability	0.70
Std error/meas	4.00

GB14: Biochemistry Subtest - Part A
based on the scores of 1123 students from 8 different institutions

