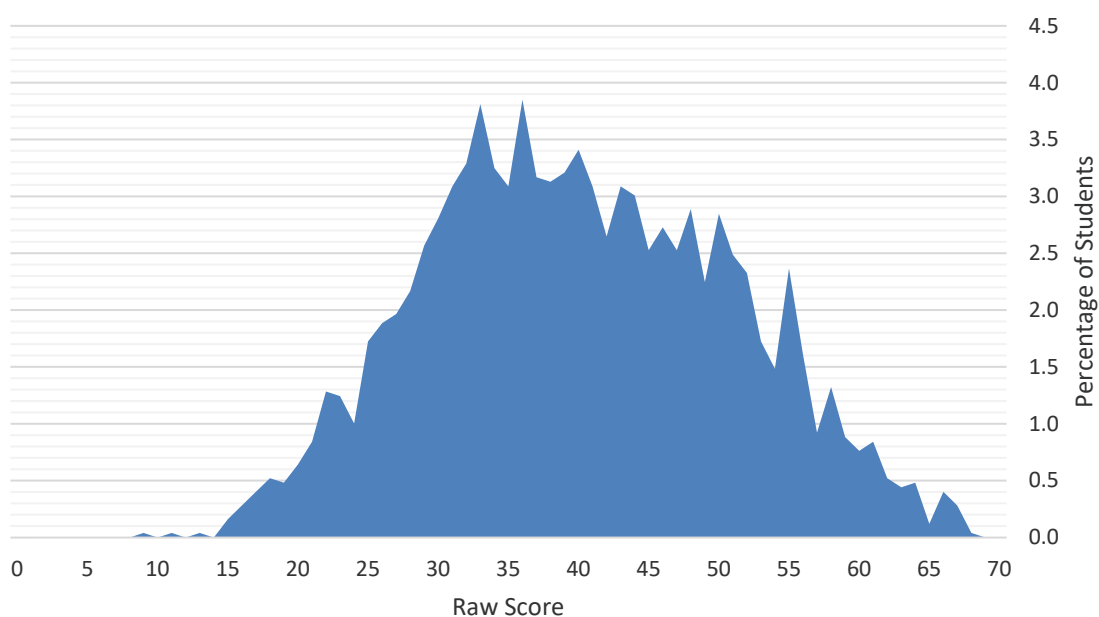


American Chemical Society Division of Chemical Education
Composite Norms
Organic Chemistry, Full-Year 2023 (OR23)

Score	Percentile	Score	Percentile	Score	Percentile
70	100	44	64	18	1
69	100	43	61	17	1
68	100	42	58	16	0
67	100	41	55	15	0
66	99	40	52	14	0
65	99	39	48	13	0
64	99	38	45	12	0
63	98	37	42	11	0
62	98	36	39	10	0
61	97	35	35	9	0
60	96	34	32	8	0
59	96	33	28	7	0
58	95	32	25	6	0
57	93	31	22	5	0
56	92	30	19	4	0
55	90	29	16	3	0
54	88	28	14	2	0
53	87	27	12	1	0
52	85	26	10	0	0
51	82	25	8		
50	80	24	6	Mean	40.1
49	77	23	5	Std. deviation	10.9
48	74	22	4	Median	40
47	72	21	3	KR-21 reliability	0.87
46	69	20	2	Std error/meas	3.96
45	66	19	2		

OR23 Final Norm
 based on the scores of 2493 students from 45 institutions



American Chemical Society Division of Chemical Education
Composite Norms *with partial credit scoring*
Organic Chemistry, Full-Year 2023 (OR23)

Score	Percentile	Score	Percentile	Score	Percentile
70	100	44	51	18	0
69	100	43	48	17	0
68	100	42	44	16	0
67	99	41	41	15	0
66	99	40	37	14	0
65	99	39	34	13	0
64	98	38	31	12	0
63	98	37	27	11	0
62	97	36	23	10	0
61	96	35	20	9	0
60	94	34	17	8	0
59	93	33	14	7	0
58	91	32	12	6	0
57	89	31	10	5	0
56	87	30	8	4	0
55	85	29	6	3	0
54	82	28	5	2	0
53	79	27	4	1	0
52	76	26	3	0	0
51	73	25	2		
50	71	24	1	Mean	44.0
49	68	23	1	Std. deviation	10.0
48	64	22	0	Median	44
47	61	21	0	KR-21 reliability	0.85
46	58	20	0	Std error/meas	3.89
45	55	19	0		

OR23 Final Norm

based on the scores with partial credit of 1777 students from 23 institutions

