

**STAAR Modified
2012 Score Distributions
and Statistics
by Content Area
and Grade**

Glossary

This glossary provides definitions for the statistical terms that appear in the tables and graphs in this section (“STAAR Modified 2012 Score Distributions and Statistics by Content Area and Grade”) of Appendix C. Definition of statistical terms and concepts in the other sections are given in chapter 3 or chapter 5.

Descriptive Statistics

Mean. The mean is a measure of central tendency. It is the average score for the assessment. It is computed by summing the scores of all students and dividing it by the total number of students (N).

Median. The median is another measure of central tendency. It is the score at the middle of the frequency distribution for the assessment. It is computed by finding the score at which there is the same number of scores above as there is below.

Mode. The mode is another measure of central tendency. It is the most frequently obtained score for the assessment. It is determined by computing the frequency distribution and finding the score point with the highest frequency (n-count).

Range. The range is a measure of statistical dispersion (variability or spread). It is the difference between the lowest and highest scores obtained by students on the assessment. It is computed by subtracting the lowest score from the highest score.

Interquartile Range. The interquartile range is another measure of statistical dispersion (variability or spread). It is the difference between the 1st and 3rd quartiles (or 25th and 75th percentile) of the score distribution for the assessment. It is computed by subtracting the score at the 1st quartile (the point that splits the lowest 25% of the scores) from the score at the 3rd quartile (the point that splits the highest 25% of the scores).

Standard Deviation (SD). The standard deviation is another measure of statistical dispersion (variability or spread). It is an indicator of the degree of score variation around the mean. It is computed using the following formula.

$$SD = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N - 1}}$$

where x_i is the score for student i , \bar{x} is the mean score and N is the total number of students that took the assessment.

Variance. The variance is another measure of statistical dispersion (variability or spread) around the mean. It is computed as the square of the standard deviation (SD).

Skewness. The skewness is an indicator of the shape of the score distribution. It measures the extent to which the score distribution “leans” to one side of the mean. A positive skewness indicates that the score distribution leans below the mean. A negative skewness indicates that the score distribution leans above the mean. A skewness of zero indicates that the score distribution is symmetric around the mean. It is computed using the following formula.

$$\text{Skewness} = \frac{N}{(N-1)(N-2)} \sum_{i=1}^N \left(\frac{x_i - \bar{x}}{s_x} \right)^3$$

where x_i is the score for student i , \bar{x} is the mean score, s_x is the standard deviation (SD) and N is the total number of students that took the assessment.

Kurtosis. The kurtosis is another indicator of the shape of the score distribution. It measures the “peakedness” of the score distribution. A positive kurtosis is referred to as *leptokurtic*, meaning that the distribution has a more acute peak around the mean and fatter tails. A negative kurtosis is called *platykurtic*, meaning the distribution has a lower, wider peak around the mean and thinner tails. It is computed using the following formula.

$$\text{Kurtosis} = \frac{N(N+1)}{(N-1)(N-2)(N-3)} \sum_{i=1}^N \left(\frac{x_i - \bar{x}}{s_x} \right)^4 - \frac{3(N-1)^2}{(N-2)(N-3)}$$

where x_i is the score for student i , \bar{x} is the mean score, s_x is the standard deviation (SD) and N is the total number of students that took the assessment.

Frequency Distributions¹

Frequency (FREQ). This is the number of students that obtained the particular score point on the assessment.

Cumulative Frequency (CUM FREQ). This is the number of students that obtained a score that is less than or equal to the particular score point on the assessment.

Percentage (PCT). This is the percentage of students that obtained the particular score point on the assessment. It is computed as: $\text{PCT} = \text{FREQ} \div N \times 100$.

Cumulative Percentage (CUM PCT). This is the percentage of students that obtained a score that is less than or equal to the particular score point on the assessment. It is computed as: $\text{CUM PCT} = \text{CUM FREQ} \div N \times 100$.

¹ Frequency distributions and histograms for STAAR Modified assessments are combined across all test forms of the special operational administration.

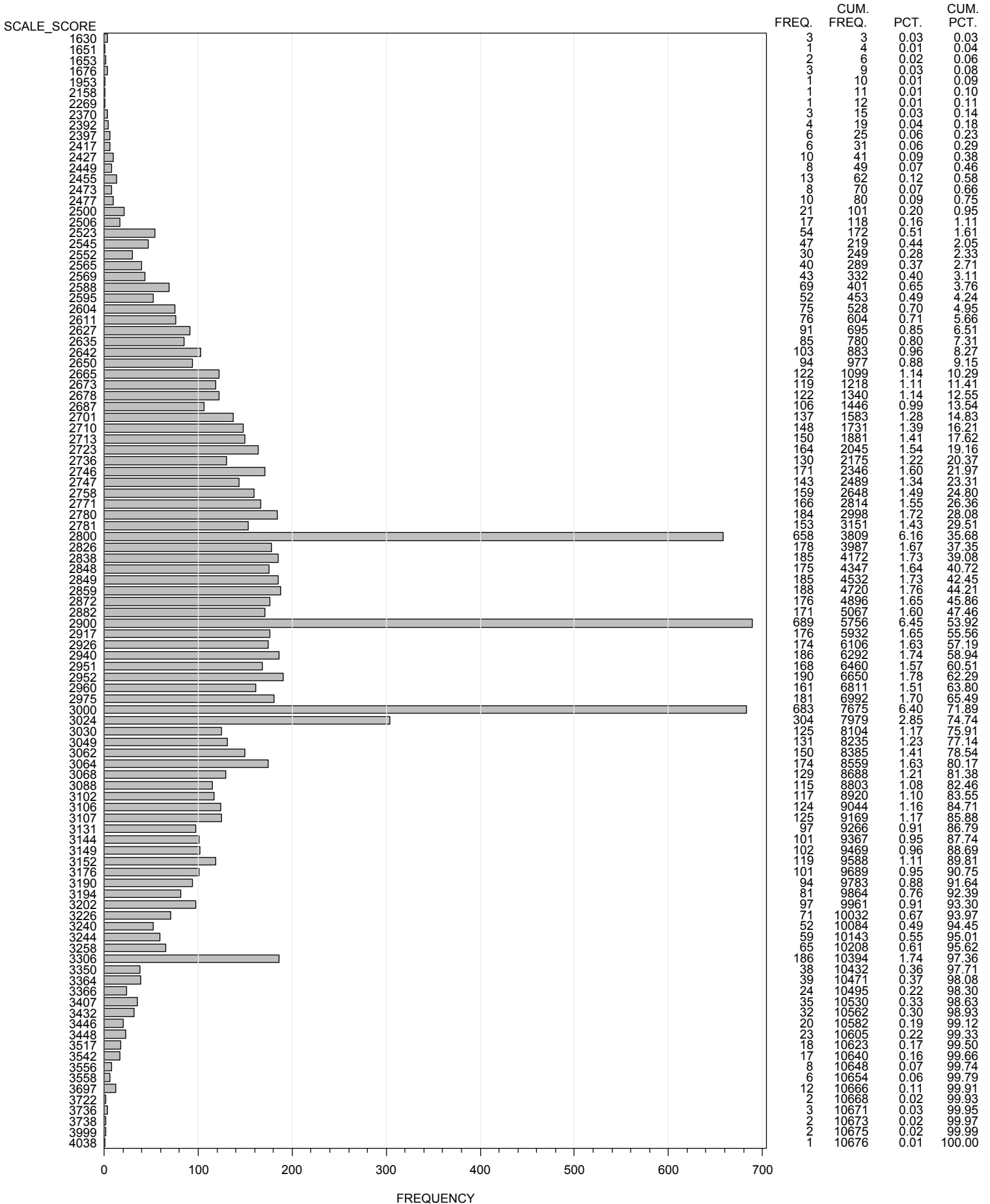
Scale Score Descriptive Statistics for 2012 STAAR Modified 3–8 Assessments

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
GRADE 3 READING	10680	2907.86	2900	2900	2408	259	203.92	41583.74	0.2611	1.5569
GRADE 4 READING	13162	2896.44	2877	2900	2311	270	201.99	40798.95	0.3160	1.0295
GRADE 5 READING	14084	2928.71	2900	2800	2749	277	202.80	41127.34	0.4216	1.6175
GRADE 6 READING	13265	2910.51	2900	2900	2800	267	204.74	41917.54	0.0963	2.1947
GRADE 7 READING	12604	2896.80	2900	2800	2490	270	202.68	41080.51	0.2259	1.4154
GRADE 8 READING	11938	2888.35	2871	2800	2288	285	202.02	40812.04	0.3271	0.6652
GRADE 3 MATHEMATICS	9322	2921.47	2900	2776	3310	403	290.06	84135.49	0.5136	1.4433
GRADE 4 MATHEMATICS	12101	2916.86	2867	2800	3132	386	288.73	83365.37	0.6024	1.3313
GRADE 5 MATHEMATICS	13350	2907.19	2876	2800	3950	347	289.85	84014.40	0.5308	2.3618
GRADE 6 MATHEMATICS	13388	2860.24	2800	2800	4038	372	290.61	84454.45	0.5133	2.5874
GRADE 7 MATHEMATICS	13062	2876.24	2831	2800	4110	377	285.97	81780.64	0.5379	1.4971
GRADE 8 MATHEMATICS	12721	2849.94	2800	2800	4091	383	290.47	84373.03	0.4975	2.8792
GRADE 5 SCIENCE	11763	2838.79	2823	2900	2607	320	249.58	62290.02	0.6337	1.3273
GRADE 8 SCIENCE	11146	2902.42	2900	2900	3363	342	250.35	62677.01	0.4764	0.7844
GRADE 8 SOCIAL STUDIES	10660	2852.77	2841	2800	3073	243	203.31	41336.94	0.7563	4.5023
GRADE 4 WRITING	13629	2888.28	2900	2800	3529	404	287.39	82592.62	0.1628	0.7011
GRADE 7 WRITING	13082	2904.12	2900	2900	3647	362	289.04	83541.52	0.0417	1.5754

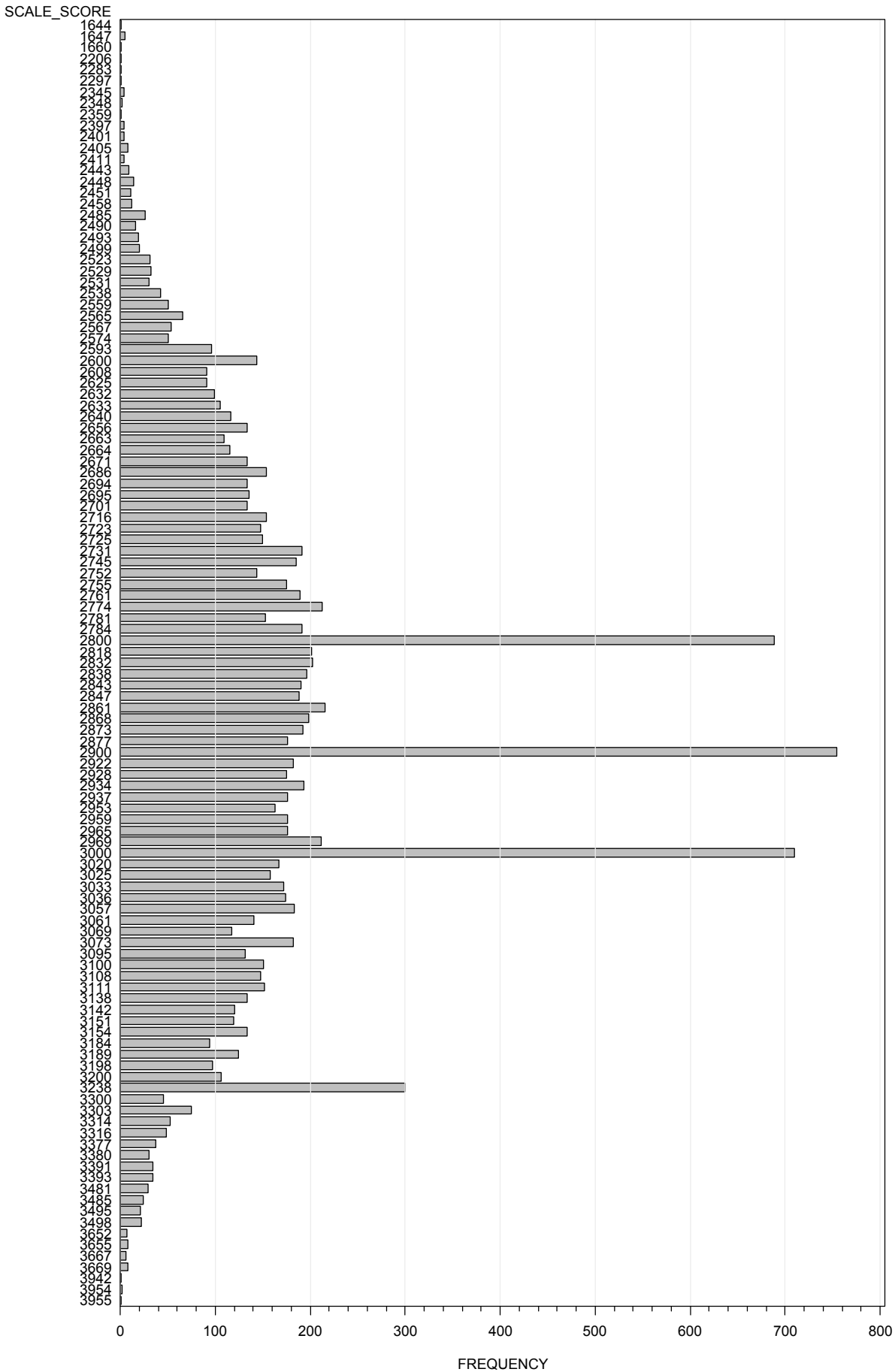
Scale Score Descriptive Statistics for 2012 STAAR Modified EOC Assessments

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
ENGLISH I - READING	10912	1465.84	1450	1430	1281	130	102.80	10567.45	-0.1394	2.9508
ENGLISH I - WRITING	10892	1445.40	1442	1430	1211	125	103.11	10631.55	0.0104	2.4319
ALGEBRA I	11712	2759.11	2772	2800	3151	258	202.41	40969.16	0.1662	2.9647
BIOLOGY	8934	2792.51	2771	2800	3061	244	203.21	41292.64	0.2108	2.8415
WORLD GEOGRAPHY	9160	2870.24	2837	2800	2795	244	211.19	44600.60	-0.0536	7.6053

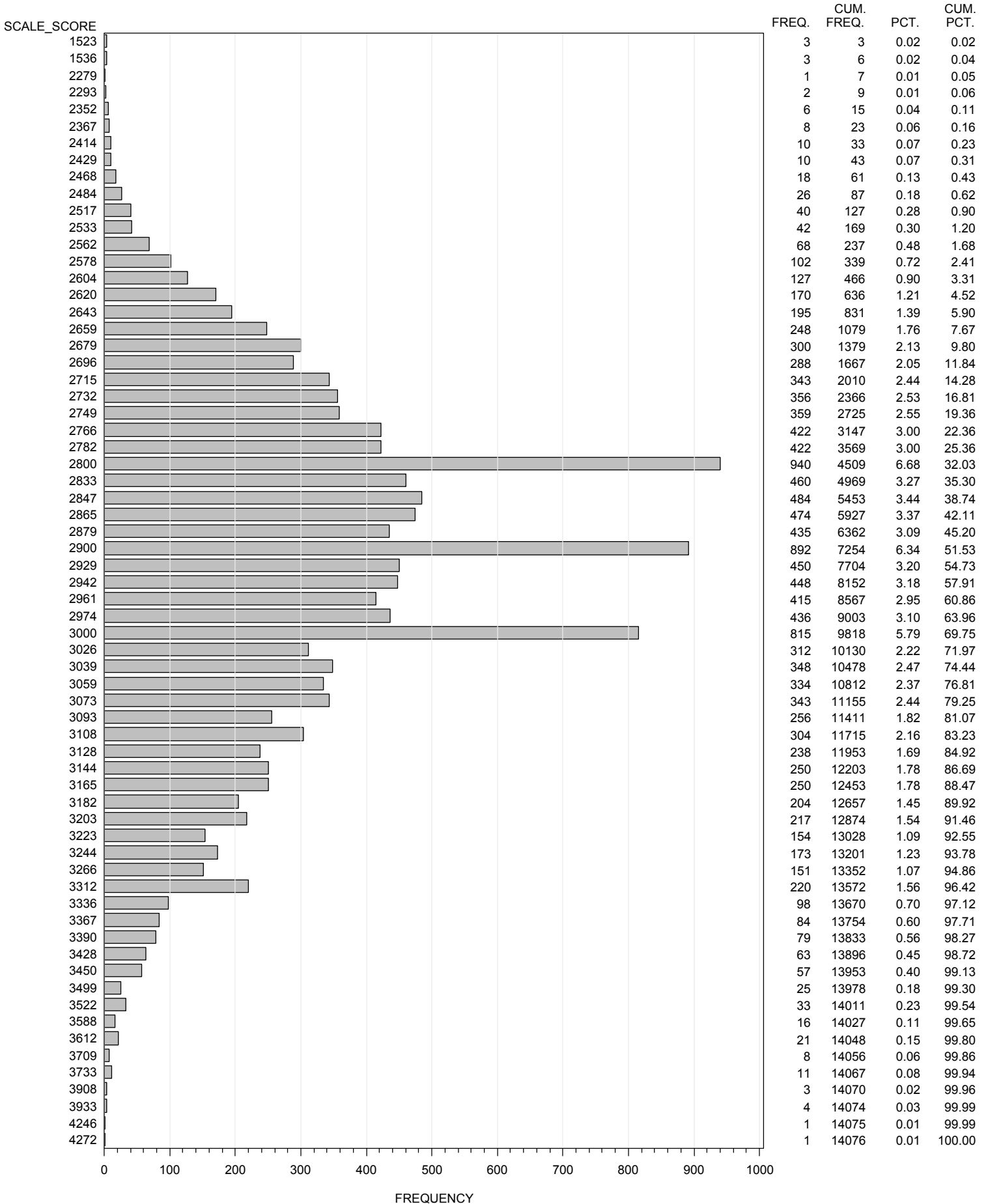
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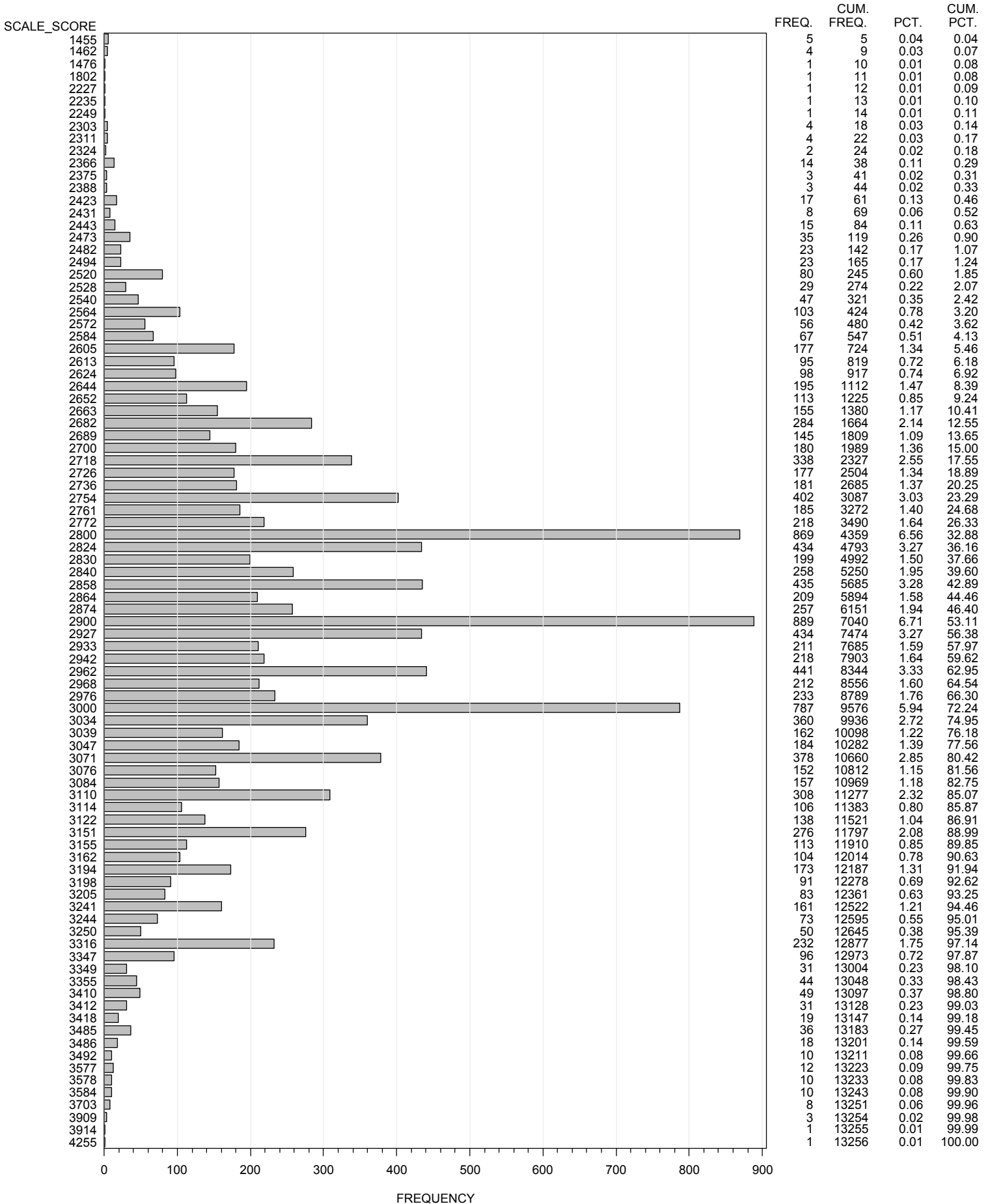
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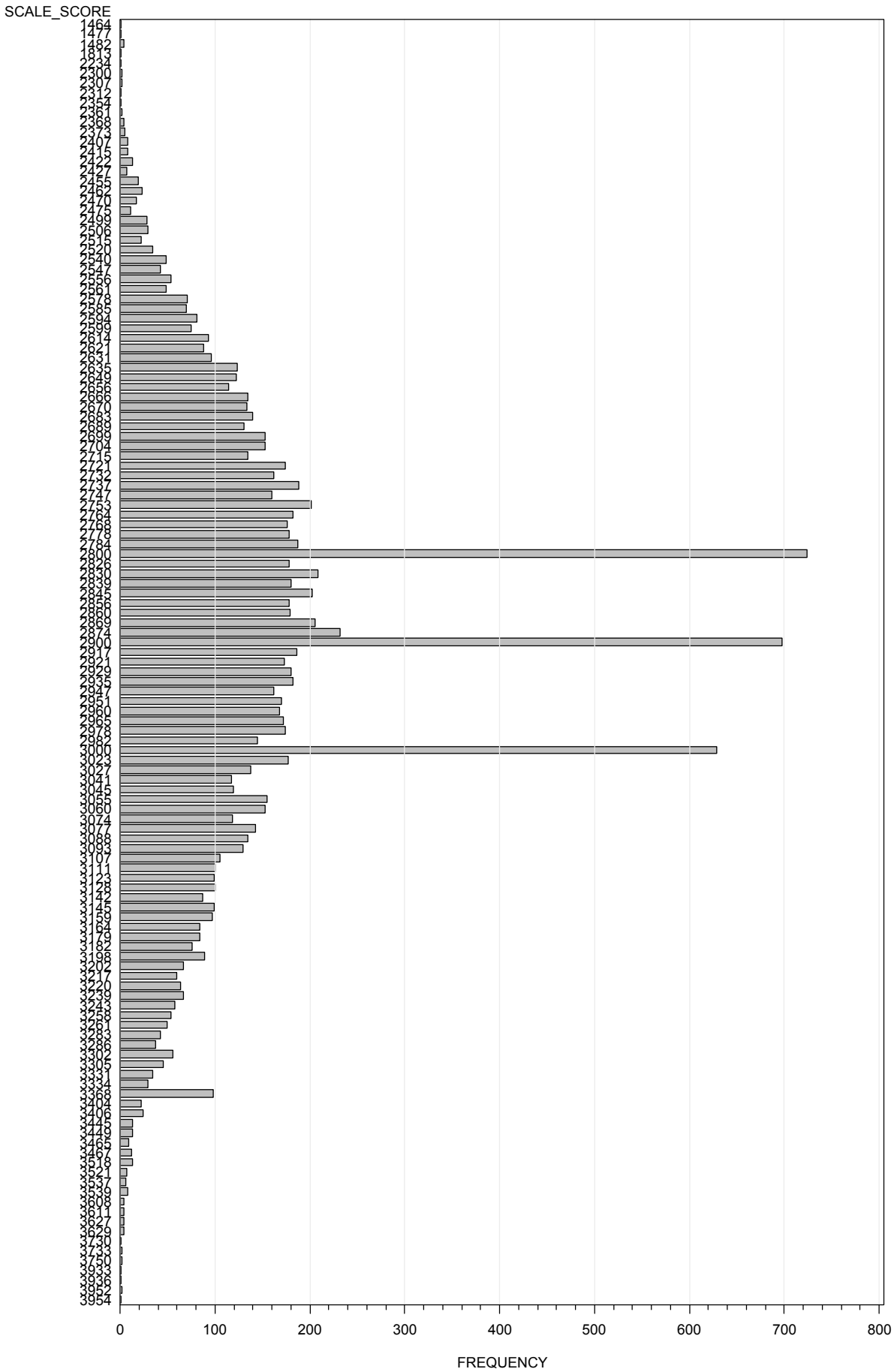
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 GRADE 6 READING
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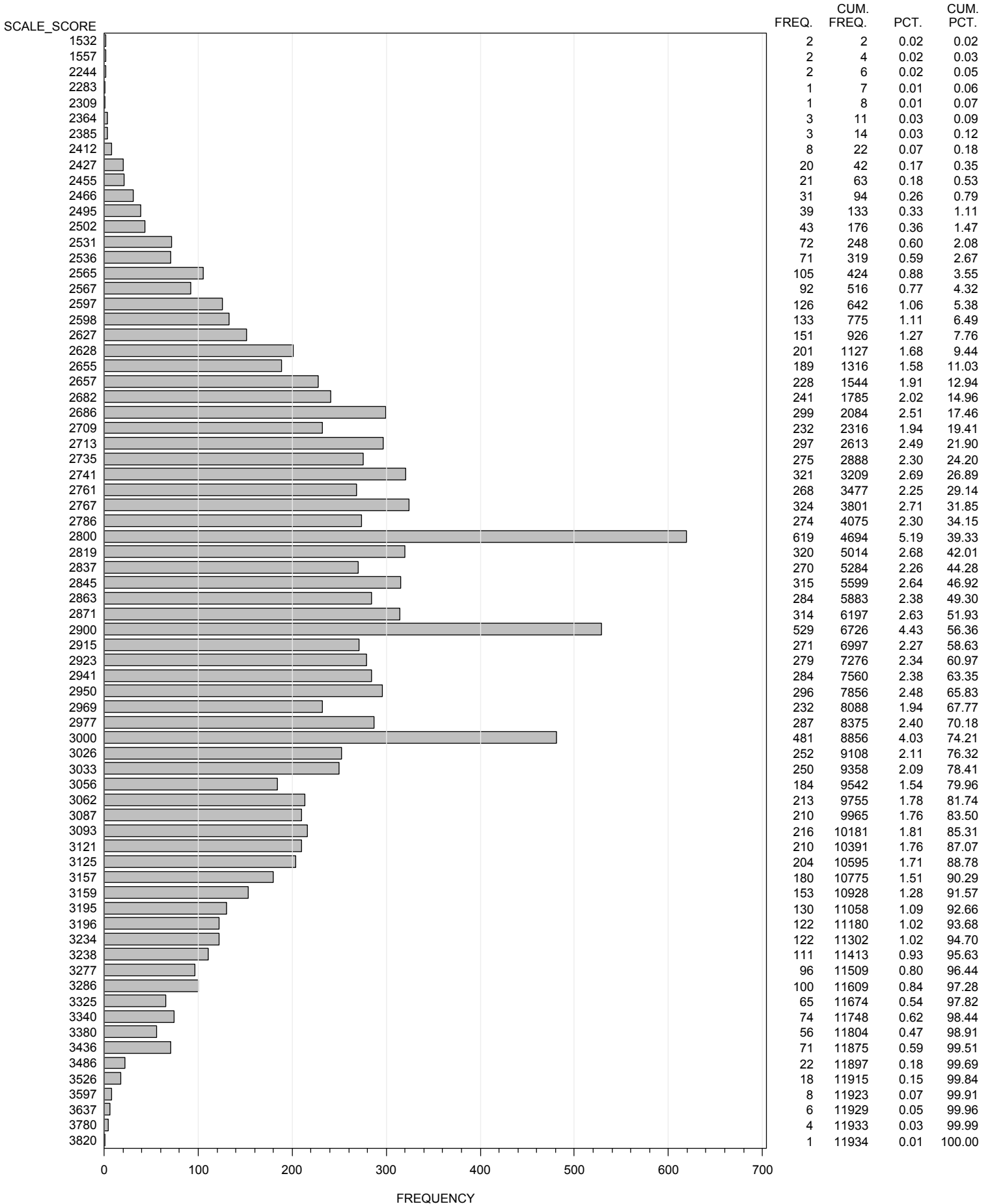


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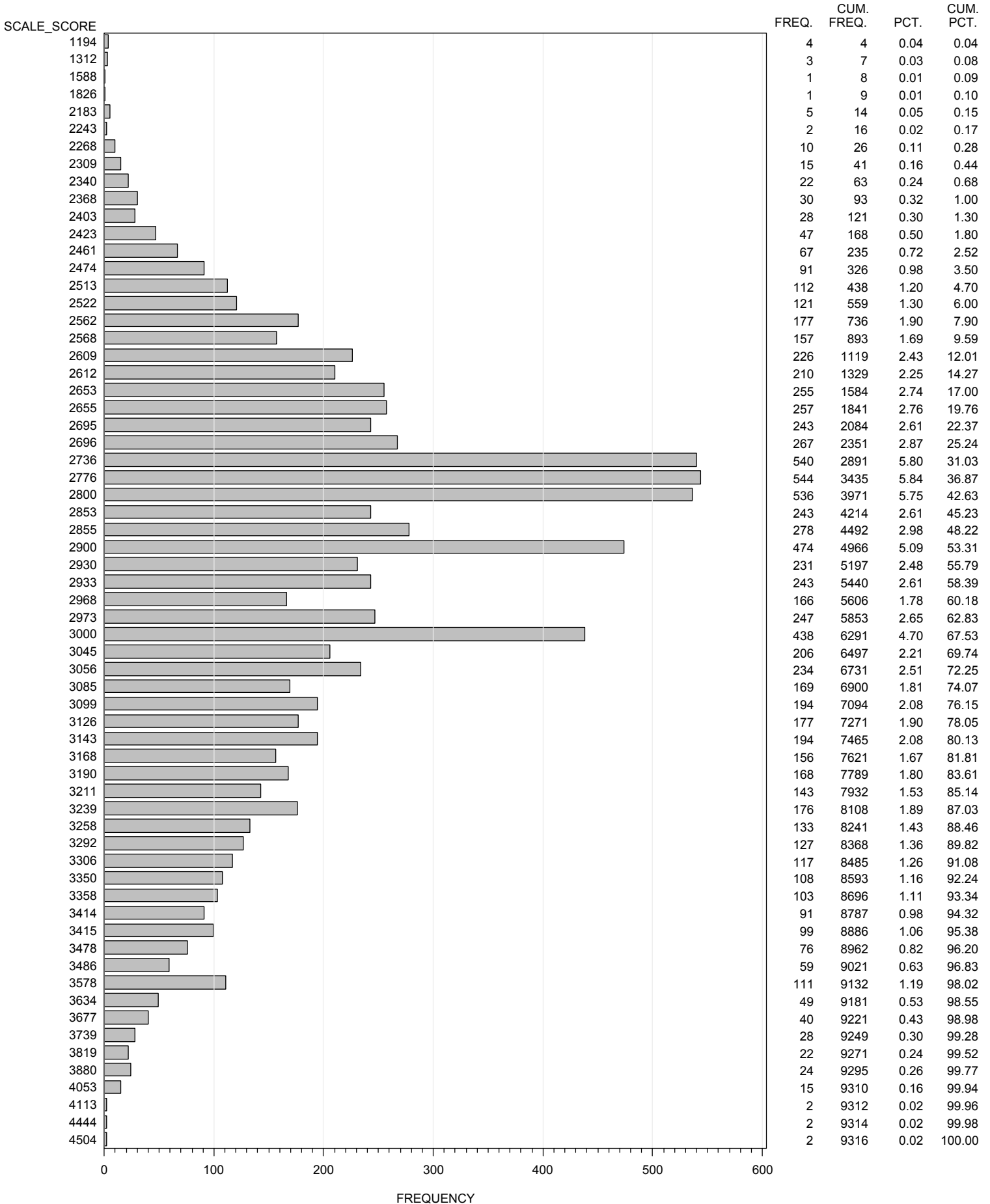


SCALE_SCORE	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
149	720	720	100.00	100.00
148	620	1340	86.36	99.99
147	520	1860	73.08	99.97
146	420	2280	59.09	99.94
145	320	2600	43.63	99.90
144	220	2820	31.25	99.85
143	120	2940	15.79	99.79
142	120	3060	15.79	99.72
141	120	3180	15.79	99.64
140	120	3300	15.79	99.56
139	120	3420	15.79	99.47
138	120	3540	15.79	99.38
137	120	3660	15.79	99.29
136	120	3780	15.79	99.20
135	120	3900	15.79	99.11
134	120	4020	15.79	99.02
133	120	4140	15.79	98.93
132	120	4260	15.79	98.84
131	120	4380	15.79	98.75
130	120	4500	15.79	98.66
129	120	4620	15.79	98.57
128	120	4740	15.79	98.48
127	120	4860	15.79	98.39
126	120	4980	15.79	98.30
125	120	5100	15.79	98.21
124	120	5220	15.79	98.12
123	120	5340	15.79	98.03
122	120	5460	15.79	97.94
121	120	5580	15.79	97.85
120	120	5700	15.79	97.76
119	120	5820	15.79	97.67
118	120	5940	15.79	97.58
117	120	6060	15.79	97.49
116	120	6180	15.79	97.40
115	120	6300	15.79	97.31
114	120	6420	15.79	97.22
113	120	6540	15.79	97.13
112	120	6660	15.79	97.04
111	120	6780	15.79	96.95
110	120	6900	15.79	96.86
109	120	7020	15.79	96.77
108	120	7140	15.79	96.68
107	120	7260	15.79	96.59
106	120	7380	15.79	96.50
105	120	7500	15.79	96.41
104	120	7620	15.79	96.32
103	120	7740	15.79	96.23
102	120	7860	15.79	96.14
101	120	7980	15.79	96.05
100	620	8600	86.36	95.96
99	520	9120	73.08	95.87
98	420	9540	59.09	95.78
97	320	9860	43.63	95.69
96	220	10080	31.25	95.60
95	120	10200	15.79	95.51
94	120	10320	15.79	95.42
93	120	10440	15.79	95.33
92	120	10560	15.79	95.24
91	120	10680	15.79	95.15
90	120	10800	15.79	95.06
89	120	10920	15.79	94.97
88	120	11040	15.79	94.88
87	120	11160	15.79	94.79
86	120	11280	15.79	94.70
85	120	11400	15.79	94.61
84	120	11520	15.79	94.52
83	120	11640	15.79	94.43
82	120	11760	15.79	94.34
81	120	11880	15.79	94.25
80	120	12000	15.79	94.16
79	120	12120	15.79	94.07
78	120	12240	15.79	93.98
77	120	12360	15.79	93.89
76	120	12480	15.79	93.80
75	120	12600	15.79	93.71
74	120	12720	15.79	93.62
73	120	12840	15.79	93.53
72	120	12960	15.79	93.44
71	120	13080	15.79	93.35
70	120	13200	15.79	93.26
69	120	13320	15.79	93.17
68	120	13440	15.79	93.08
67	120	13560	15.79	92.99
66	120	13680	15.79	92.90
65	120	13800	15.79	92.81
64	120	13920	15.79	92.72
63	120	14040	15.79	92.63
62	120	14160	15.79	92.54
61	120	14280	15.79	92.45
60	120	14400	15.79	92.36
59	120	14520	15.79	92.27
58	120	14640	15.79	92.18
57	120	14760	15.79	92.09
56	120	14880	15.79	92.00
55	120	15000	15.79	91.91
54	120	15120	15.79	91.82
53	120	15240	15.79	91.73
52	120	15360	15.79	91.64
51	120	15480	15.79	91.55
50	120	15600	15.79	91.46
49	120	15720	15.79	91.37
48	120	15840	15.79	91.28
47	120	15960	15.79	91.19
46	120	16080	15.79	91.10
45	120	16200	15.79	91.01
44	120	16320	15.79	90.92
43	120	16440	15.79	90.83
42	120	16560	15.79	90.74
41	120	16680	15.79	90.65
40	120	16800	15.79	90.56
39	120	16920	15.79	90.47
38	120	17040	15.79	90.38
37	120	17160	15.79	90.29
36	120	17280	15.79	90.20
35	120	17400	15.79	90.11
34	120	17520	15.79	90.02
33	120	17640	15.79	89.93
32	120	17760	15.79	89.84
31	120	17880	15.79	89.75
30	120	18000	15.79	89.66
29	120	18120	15.79	89.57
28	120	18240	15.79	89.48
27	120	18360	15.79	89.39
26	120	18480	15.79	89.30
25	120	18600	15.79	89.21
24	120	18720	15.79	89.12
23	120	18840	15.79	89.03
22	120	18960	15.79	88.94
21	120	19080	15.79	88.85
20	120	19200	15.79	88.76
19	120	19320	15.79	88.67
18	120	19440	15.79	88.58
17	120	19560	15.79	88.49
16	120	19680	15.79	88.40
15	120	19800	15.79	88.31
14	120	19920	15.79	88.22
13	120	20040	15.79	88.13
12	120	20160	15.79	88.04
11	120	20280	15.79	87.95
10	120	20400	15.79	87.86
9	120	20520	15.79	87.77
8	120	20640	15.79	87.68
7	120	20760	15.79	87.59
6	120	20880	15.79	87.50
5	120	21000	15.79	87.41
4	120	21120	15.79	87.32
3	120	21240	15.79	87.23
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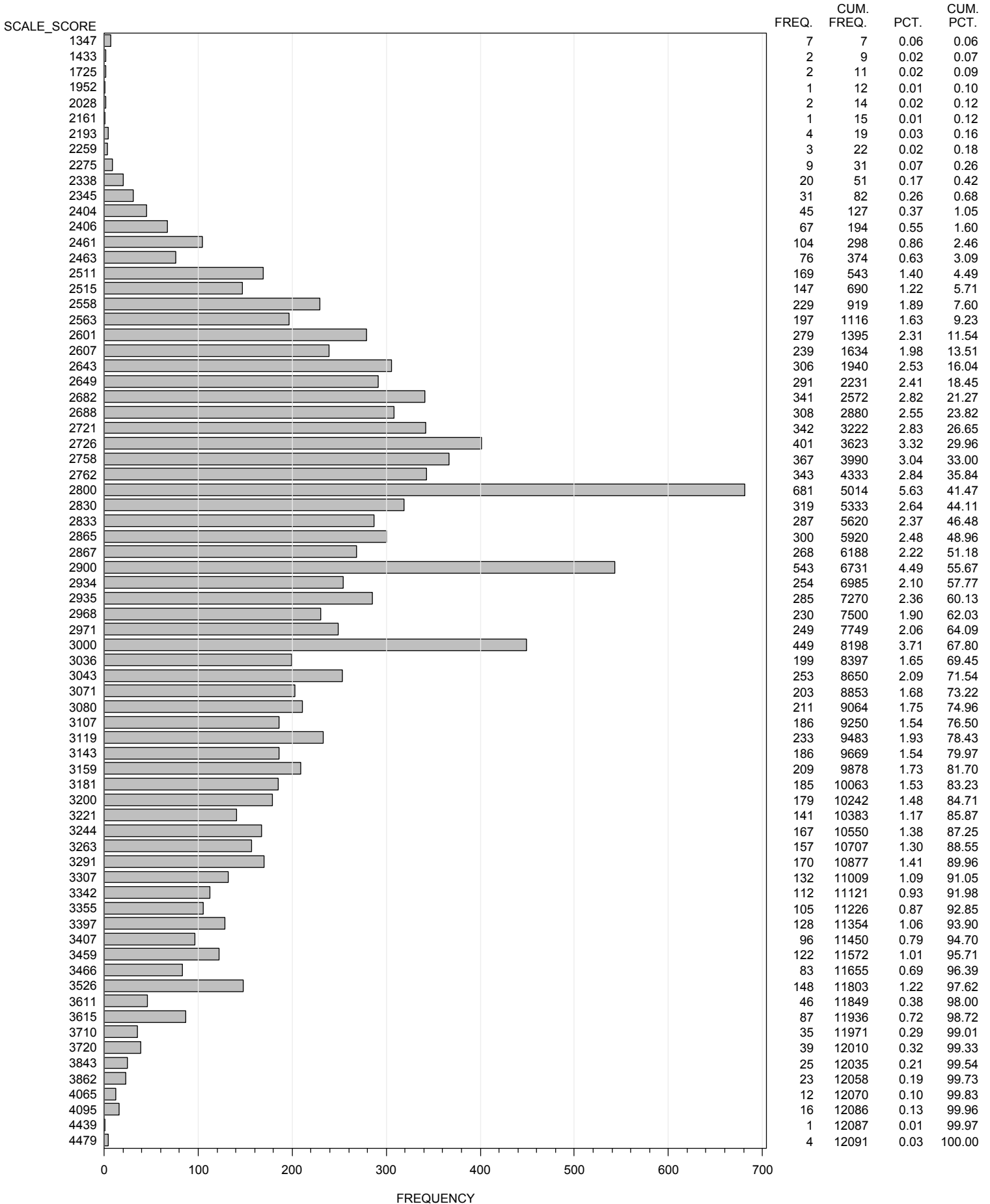
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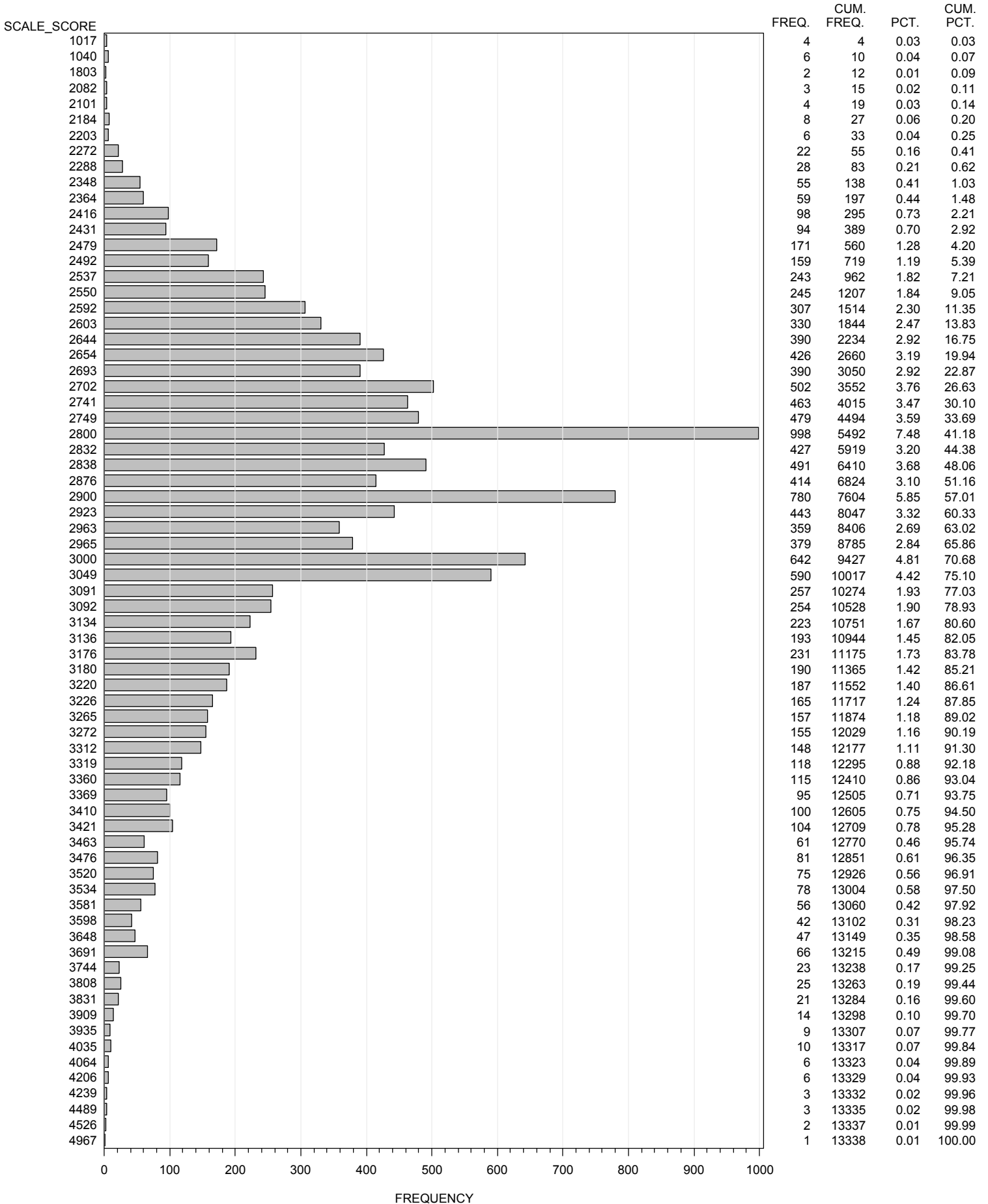
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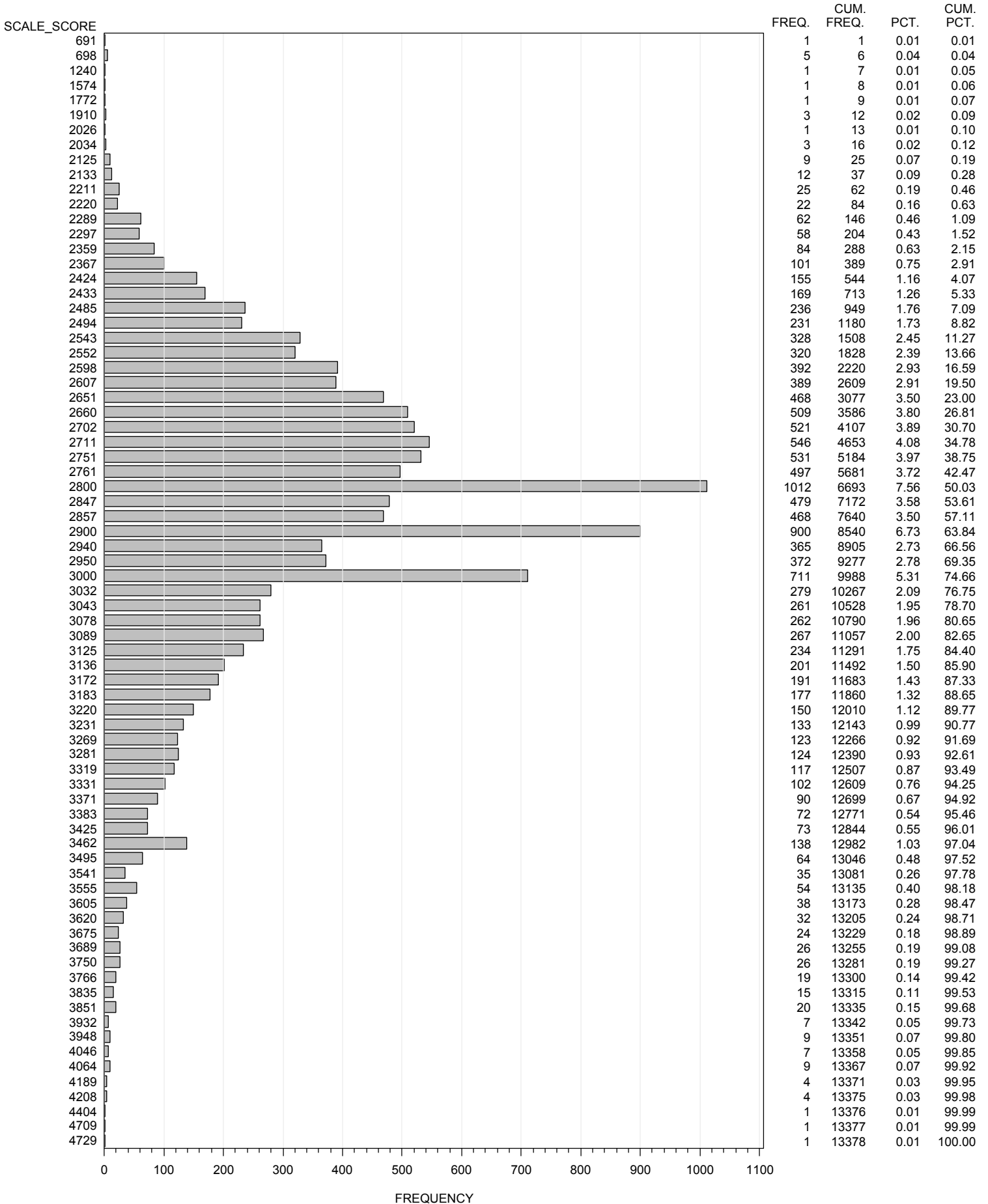
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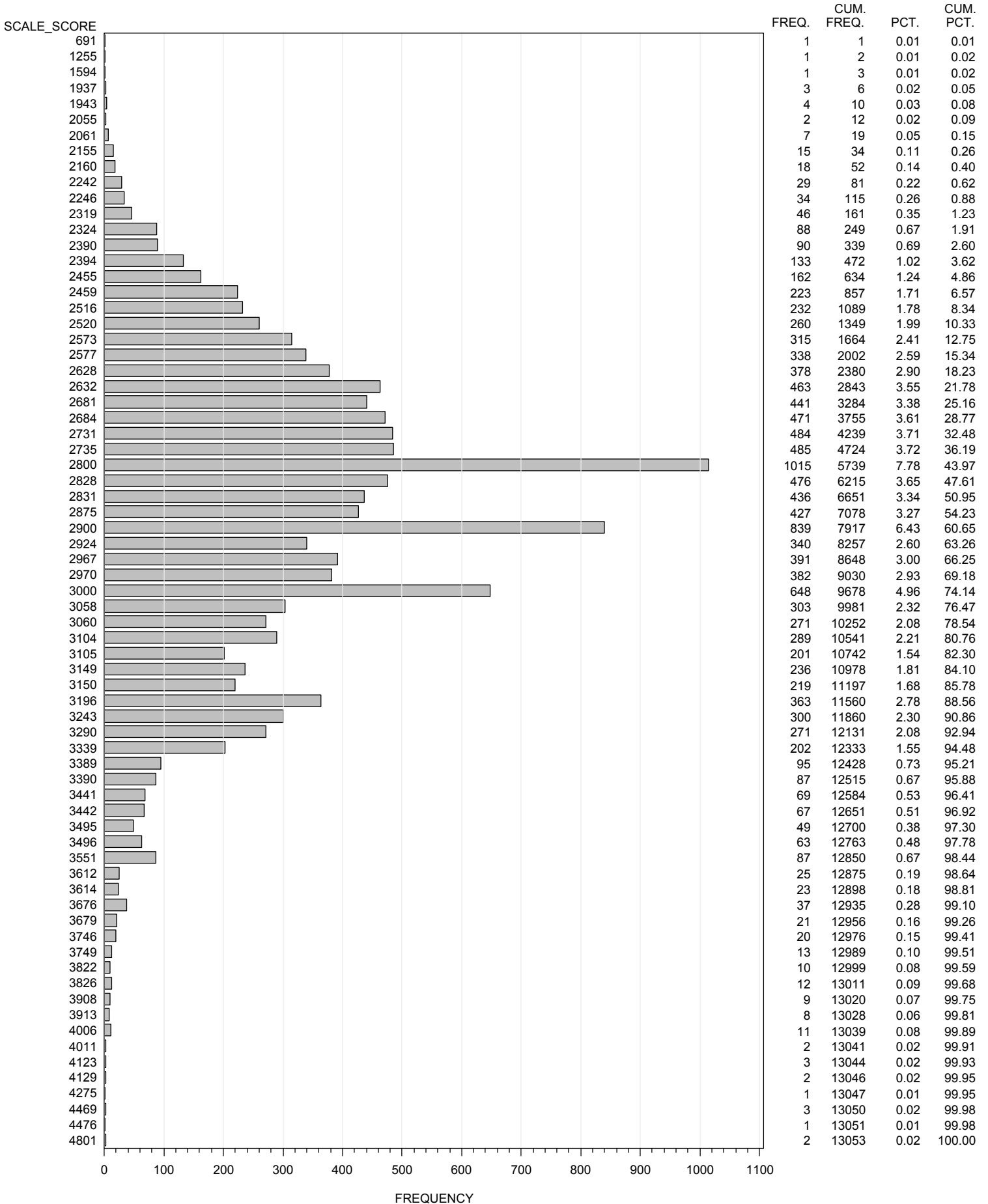
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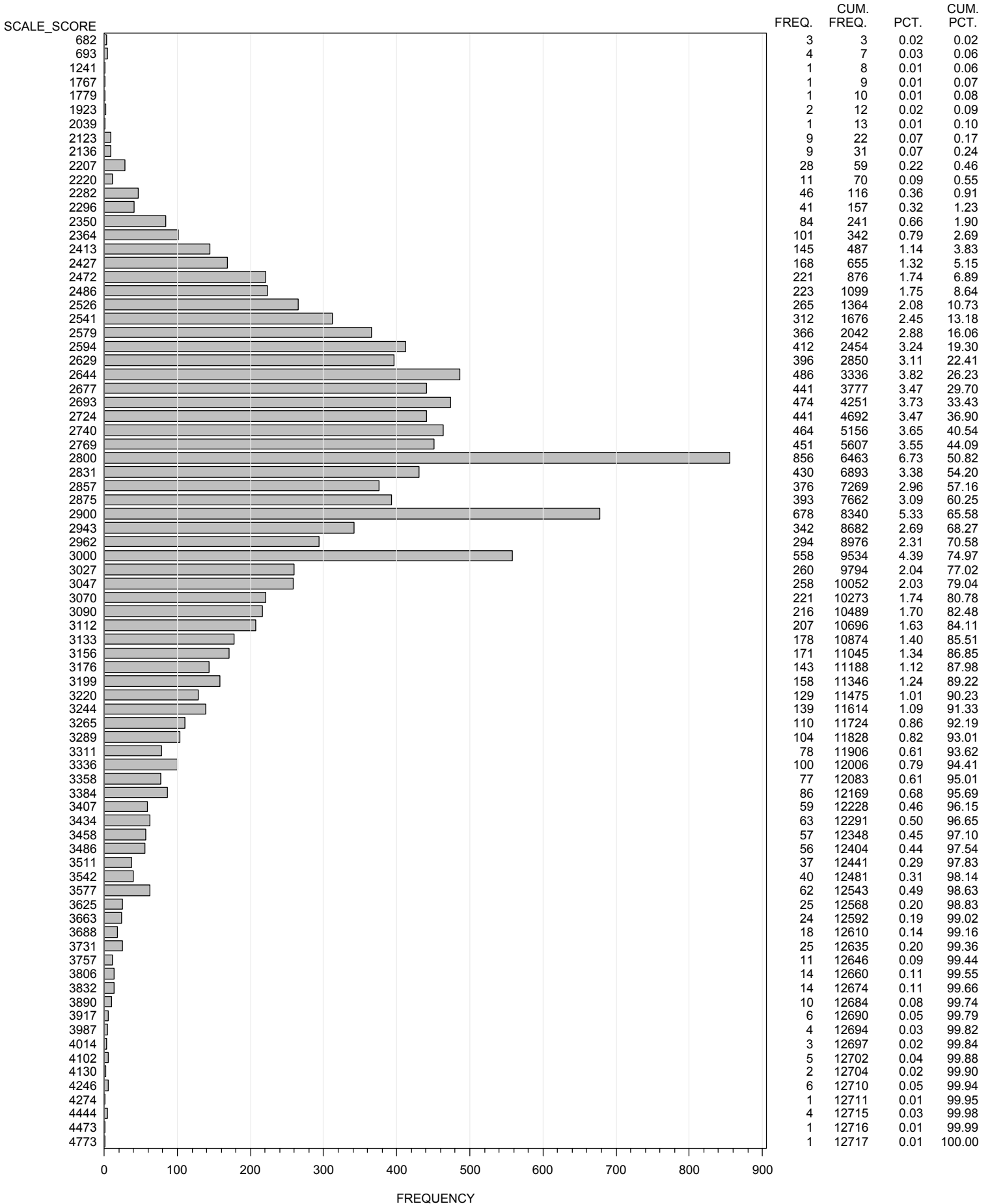
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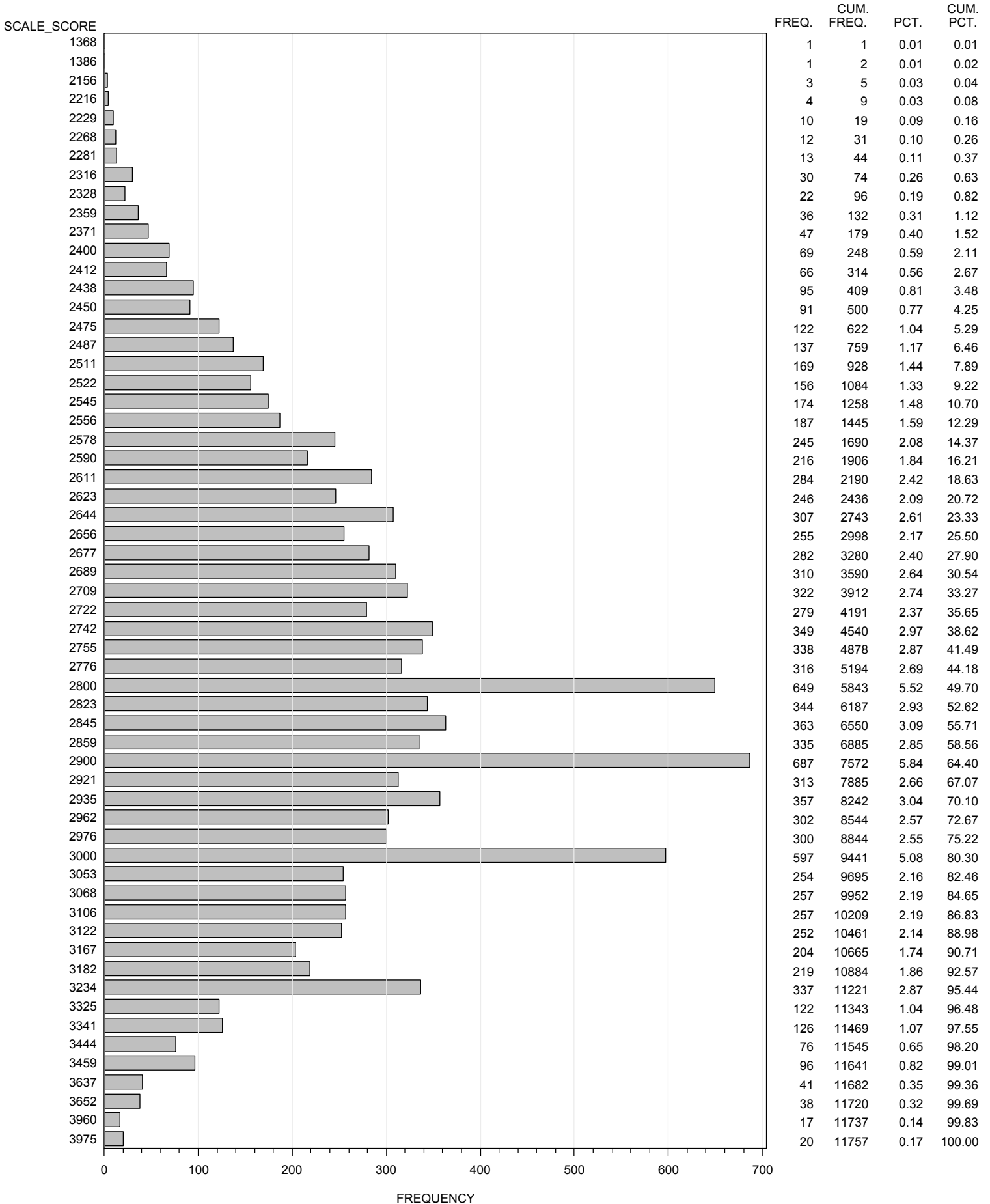
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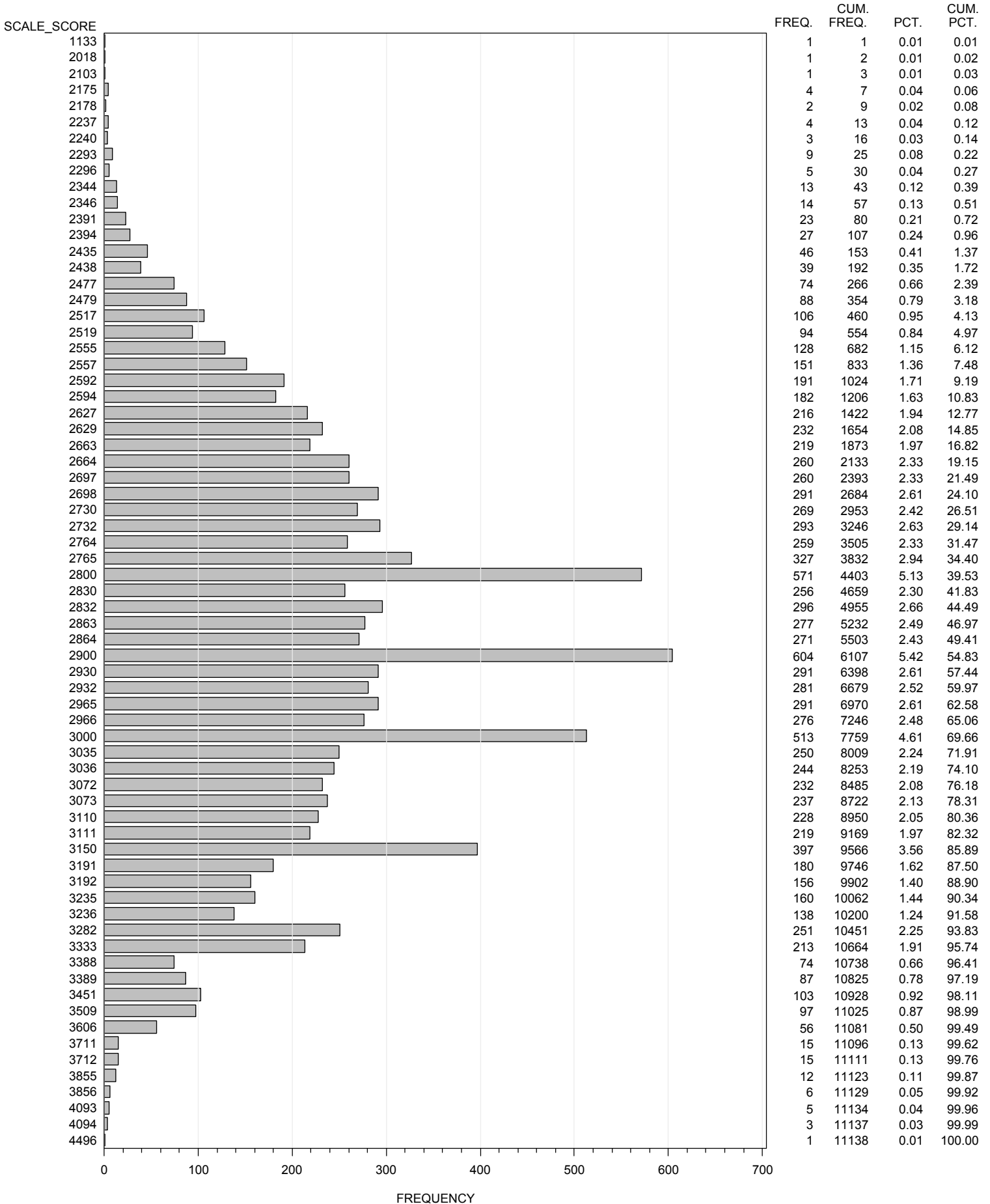
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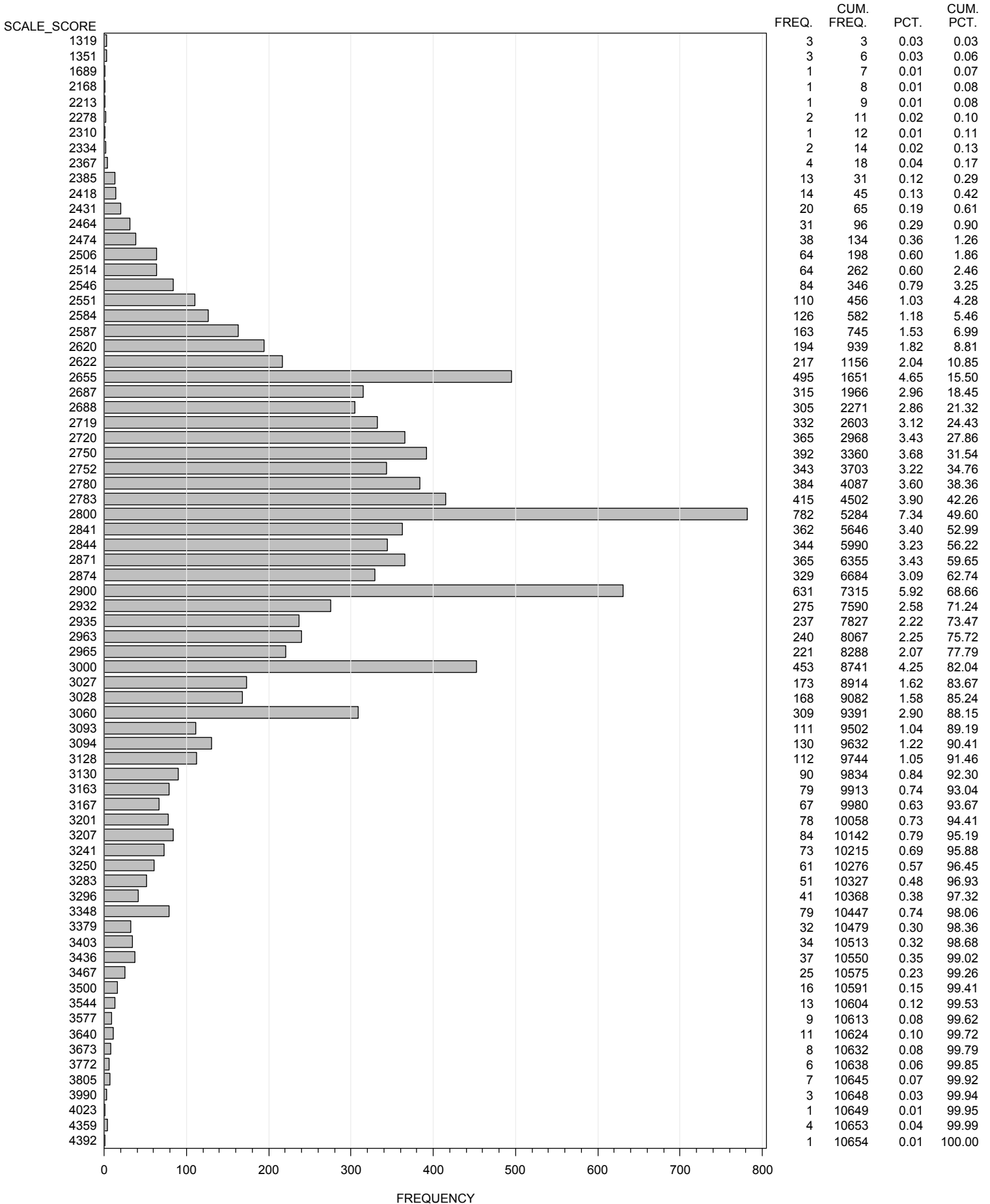
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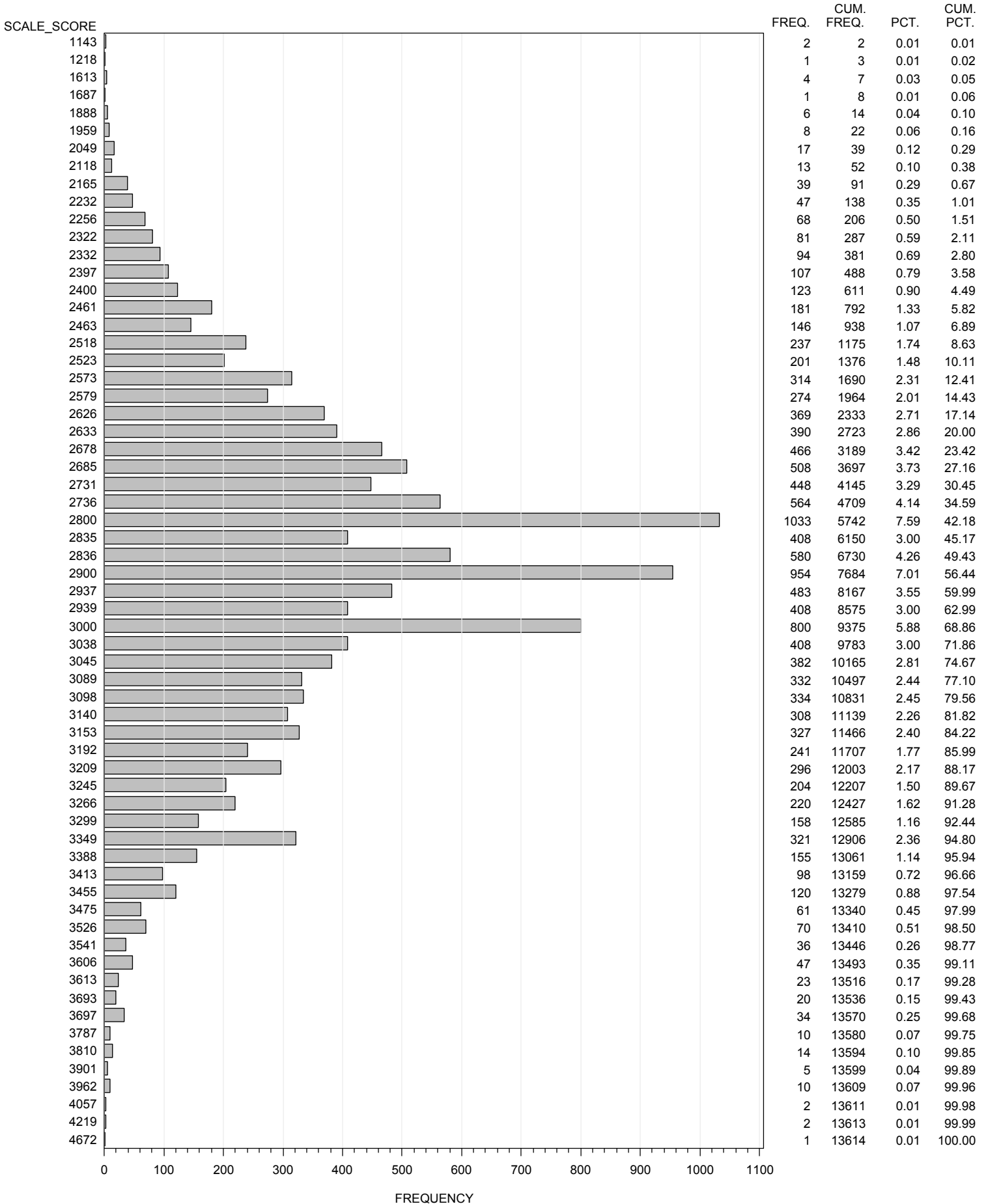
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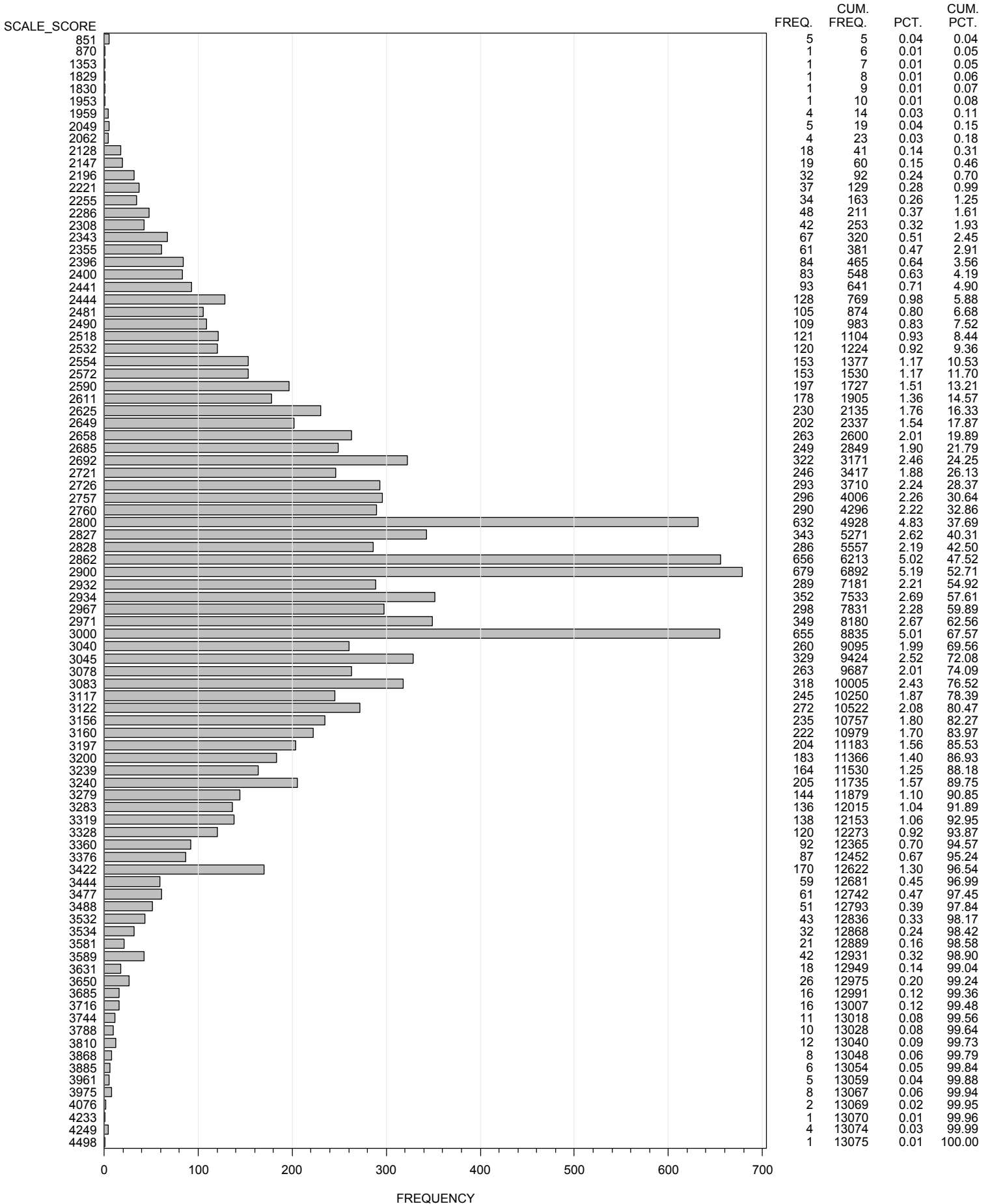
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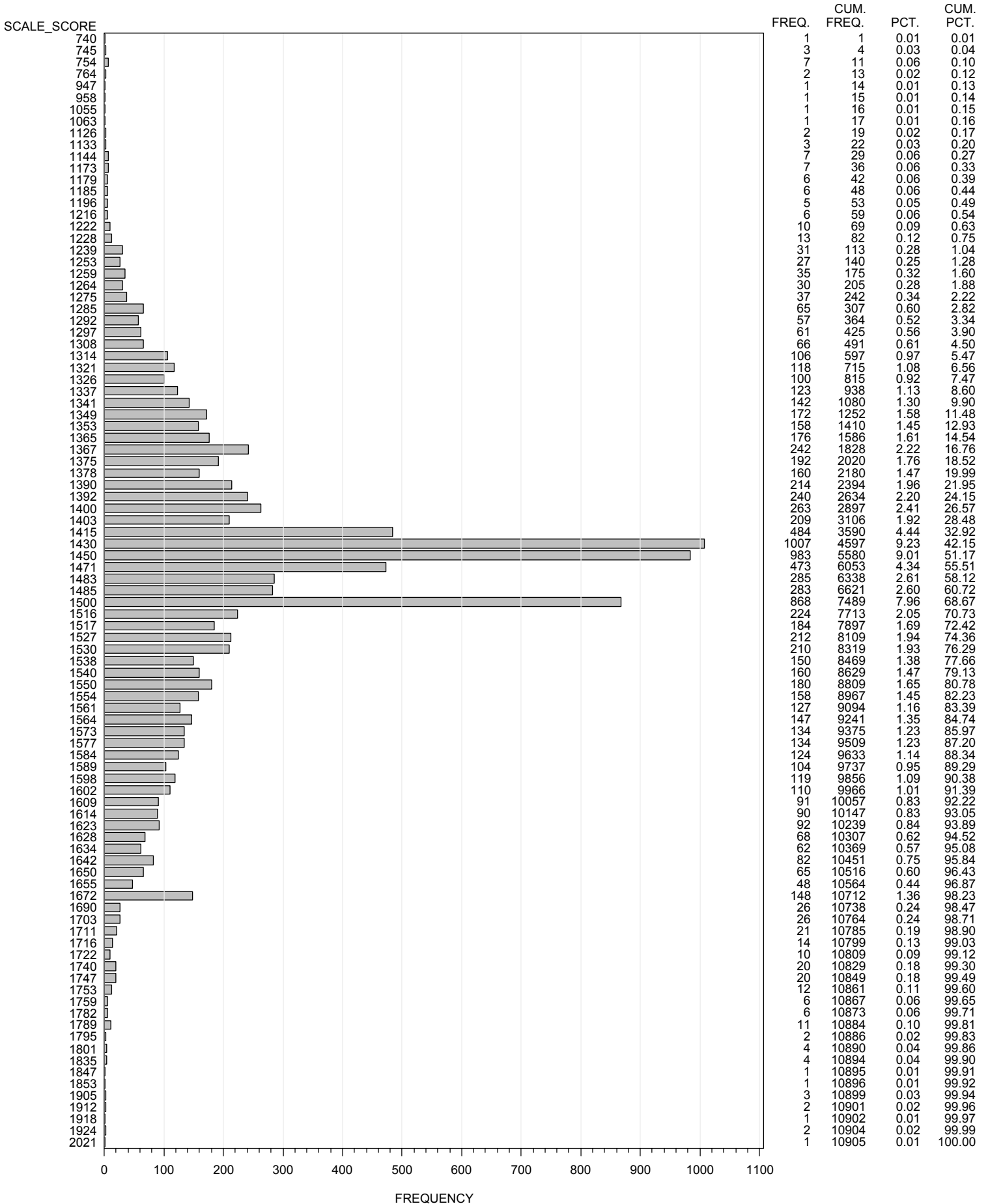
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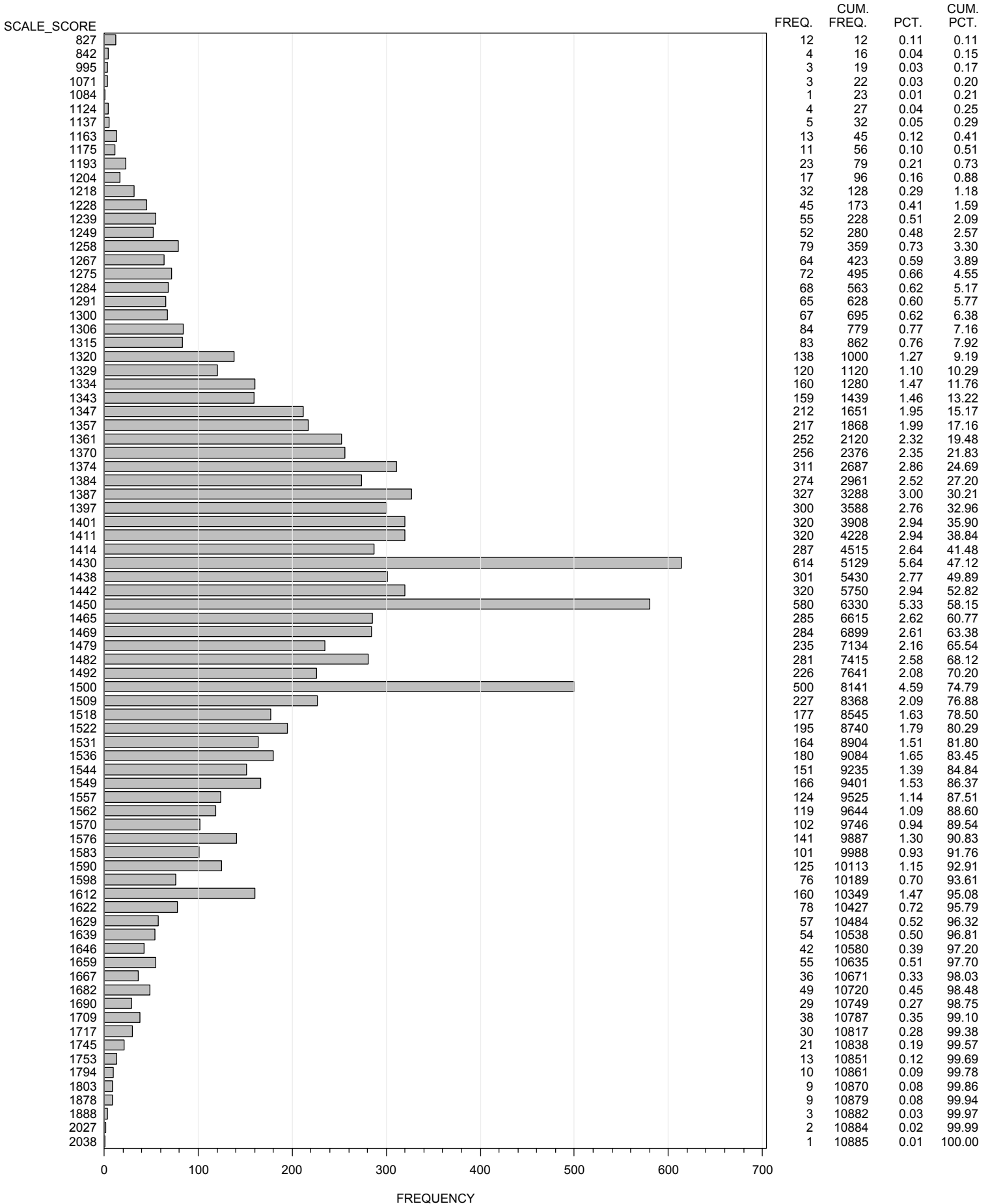
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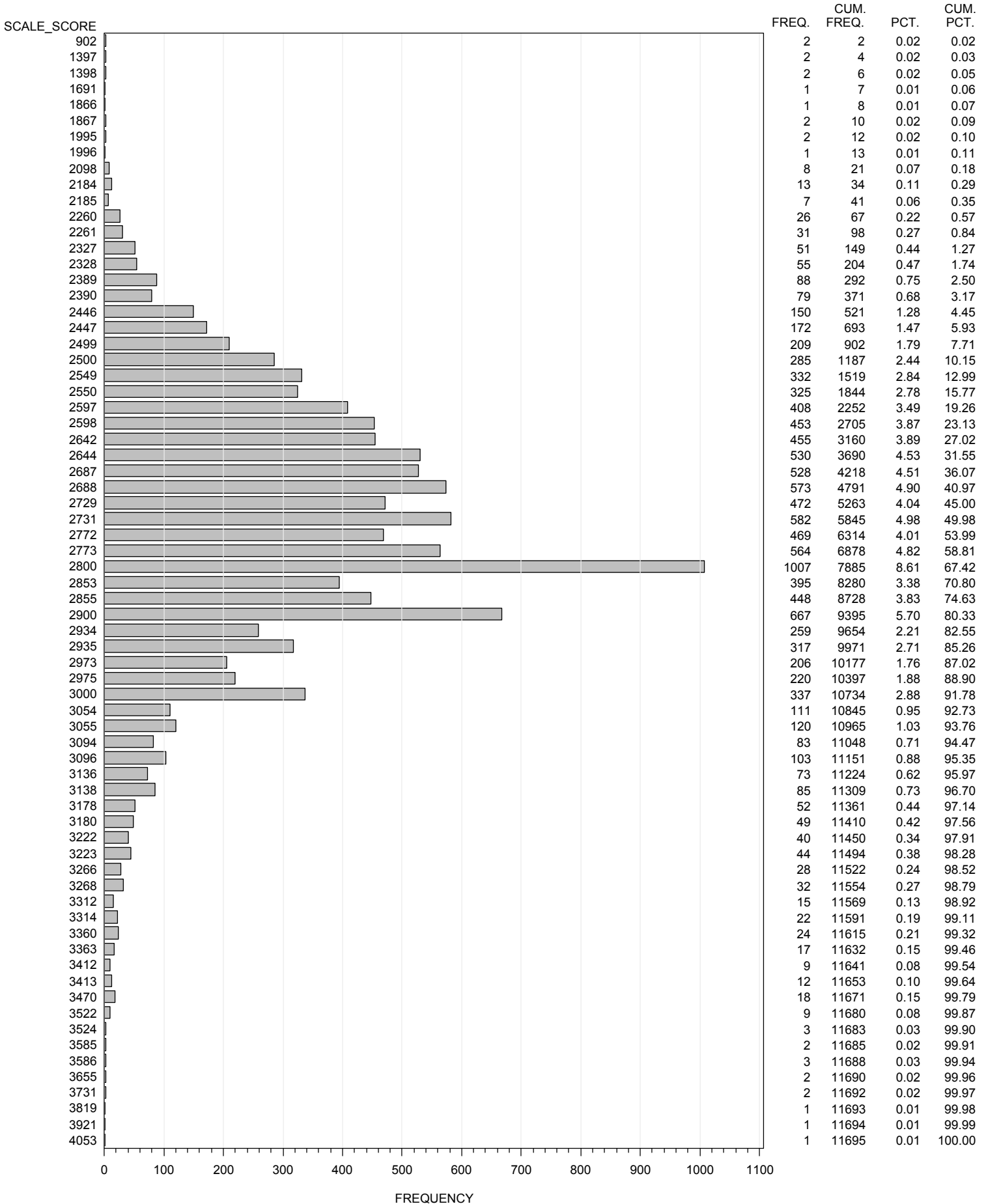
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 ENGLISH I - READING
 ALL STUDENTS



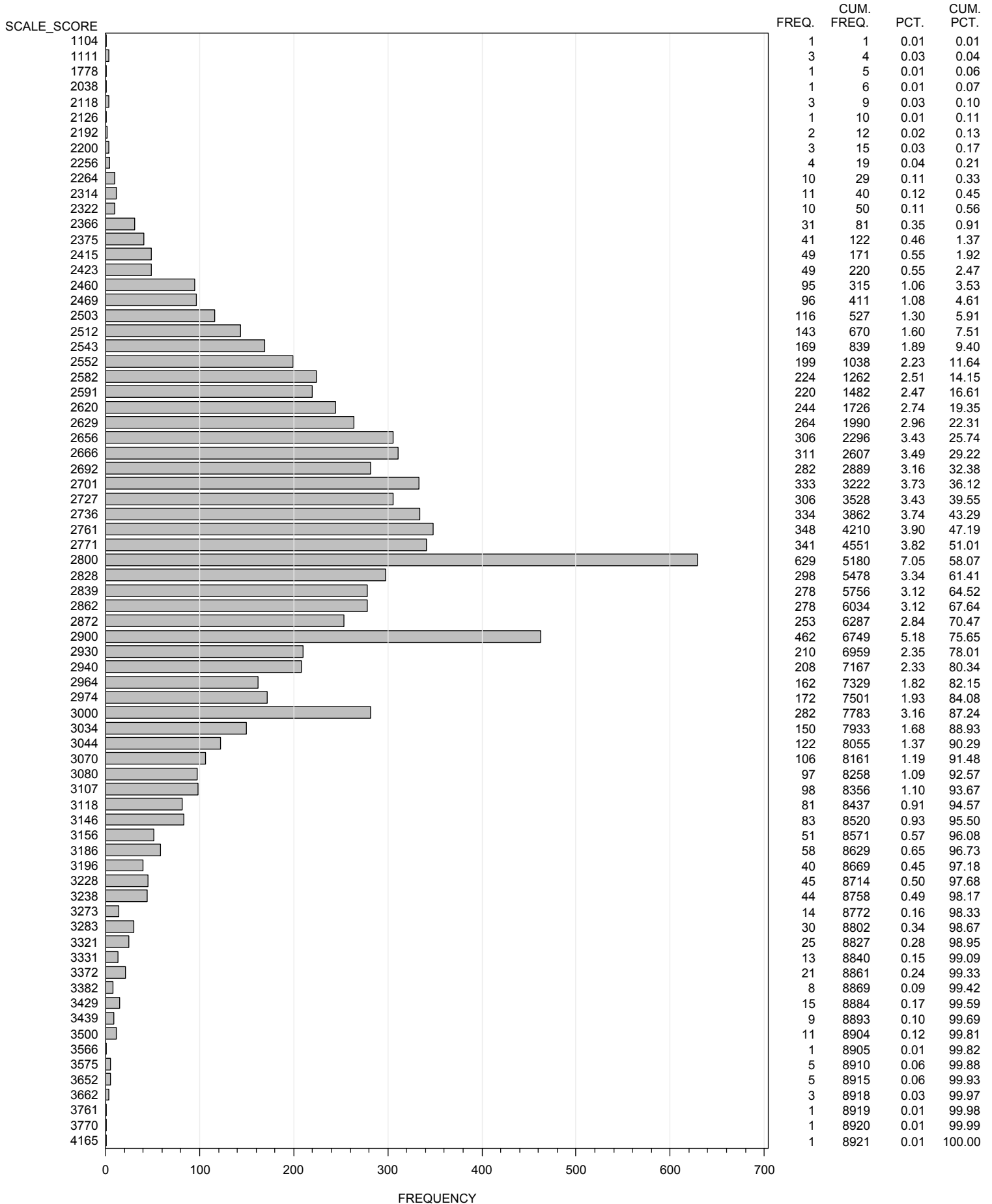
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 ENGLISH I - WRITING
 ALL STUDENTS



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 STAAR MODIFIED EOC SPRING 2012
 ALGEBRA I
 ALL STUDENTS



FREQUENCY DISTRIBUTION - SCALE SCORES
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 ALL STUDENTS

