

**STAAR Alternate
2014 Score Distribution 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 Alternate 2014 Score Distributions and Statistics by Content Area and Grade") of Appendix D. Definition of statistical terms and concepts in the other sections are given in chapter 3 or chapter 4.

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 percentiles) 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 Distributions

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: $\text{CUM PCT} = \text{CUM FREQ} \div N \times 100$.

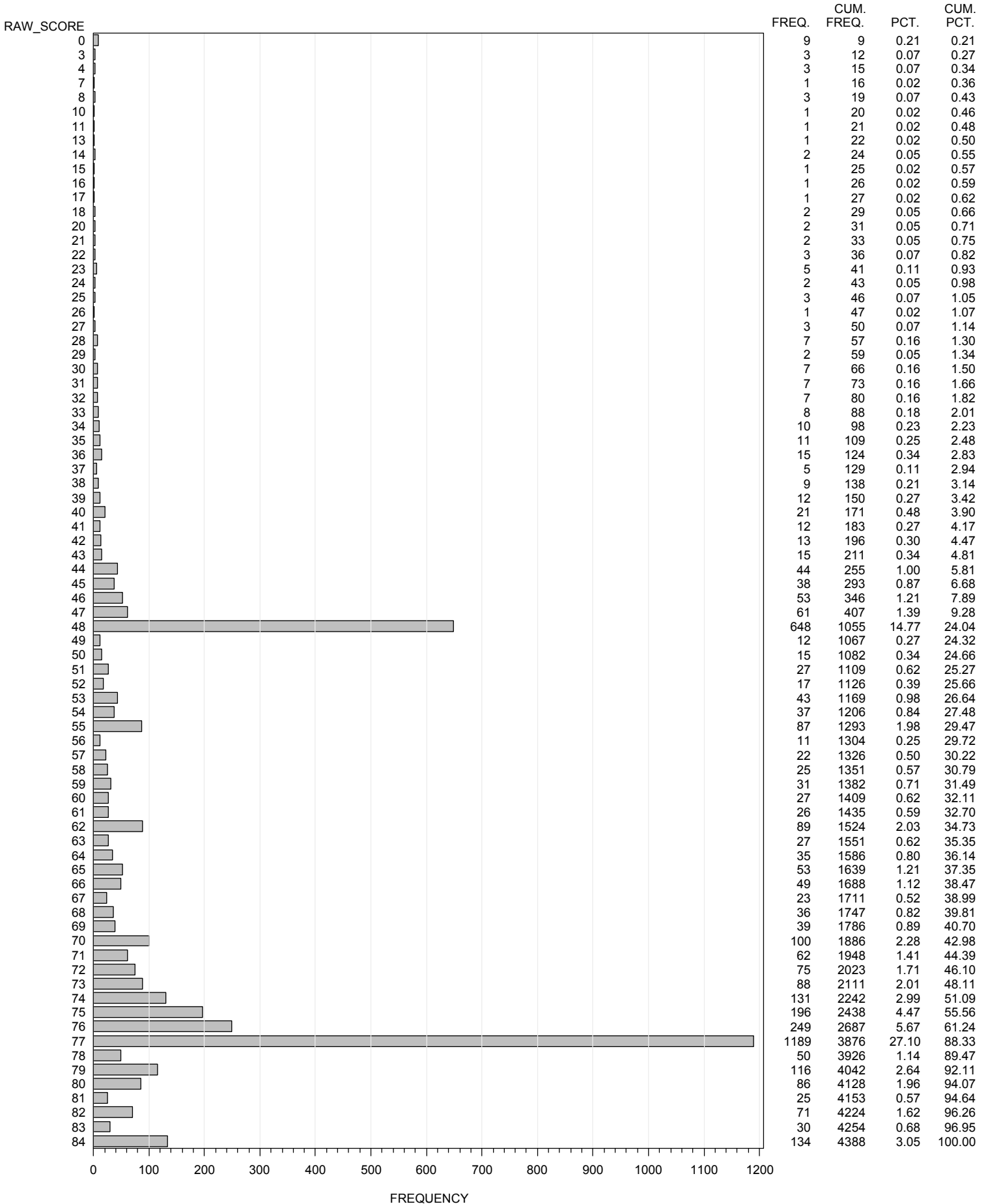
Raw Score Descriptive Statistics for 2014 STAAR Alternate 3–8 Assessments

Subject	N	Mean	Median	Mode	Interquartile		SD	Variance	Skewness	Kurtosis
					Range	Range				
GRADE 3 MATHEMATICS	4388	66.13	74	77	84	26	14.66	215.01	-1.0460	0.6959
GRADE 4 MATHEMATICS	4475	67.35	75	77	84	22	14.12	199.46	-0.9889	0.2507
GRADE 5 MATHEMATICS	4312	66.34	74	77	84	26	15.34	235.38	-1.0460	0.7626
GRADE 6 MATHEMATICS	4165	66.89	75	77	84	25	14.74	217.16	-1.0170	0.4745
GRADE 7 MATHEMATICS	3990	66.80	75	77	84	24	14.57	212.40	-1.0110	0.5167
GRADE 8 MATHEMATICS	3650	66.41	75	77	84	29	15.19	230.83	-0.9587	0.5218
GRADE 3 READING	4389	65.02	73	77	84	29	14.62	213.69	-0.9338	0.4777
GRADE 4 READING	4475	65.53	73	77	84	26	14.82	219.60	-0.9530	0.4647
GRADE 5 READING	4312	65.93	74	77	84	29	15.04	226.14	-0.9885	0.5617
GRADE 6 READING	4161	66.06	74	77	84	27	14.92	222.73	-1.0350	0.7793
GRADE 7 READING	3990	65.48	73	77	84	29	15.13	228.94	-0.9370	0.3957
GRADE 8 READING	3649	65.22	73	77	84	29	15.39	236.71	-0.9118	0.4652
GRADE 4 WRITING	4474	65.36	73	77	84	29	14.78	218.51	-0.9472	0.3886
GRADE 7 WRITING	3990	65.58	74	77	84	29	15.22	231.64	-1.0380	0.8564
GRADE 5 SCIENCE	4313	66.91	75	77	84	24	14.46	209.16	-0.9984	0.4580
GRADE 8 SCIENCE	3648	66.78	75	77	84	25	14.66	215.05	-0.9610	0.4389
GRADE 8 SOCIAL STUDIES	3647	66.51	75	77	84	27	14.70	215.99	-0.9565	0.4136

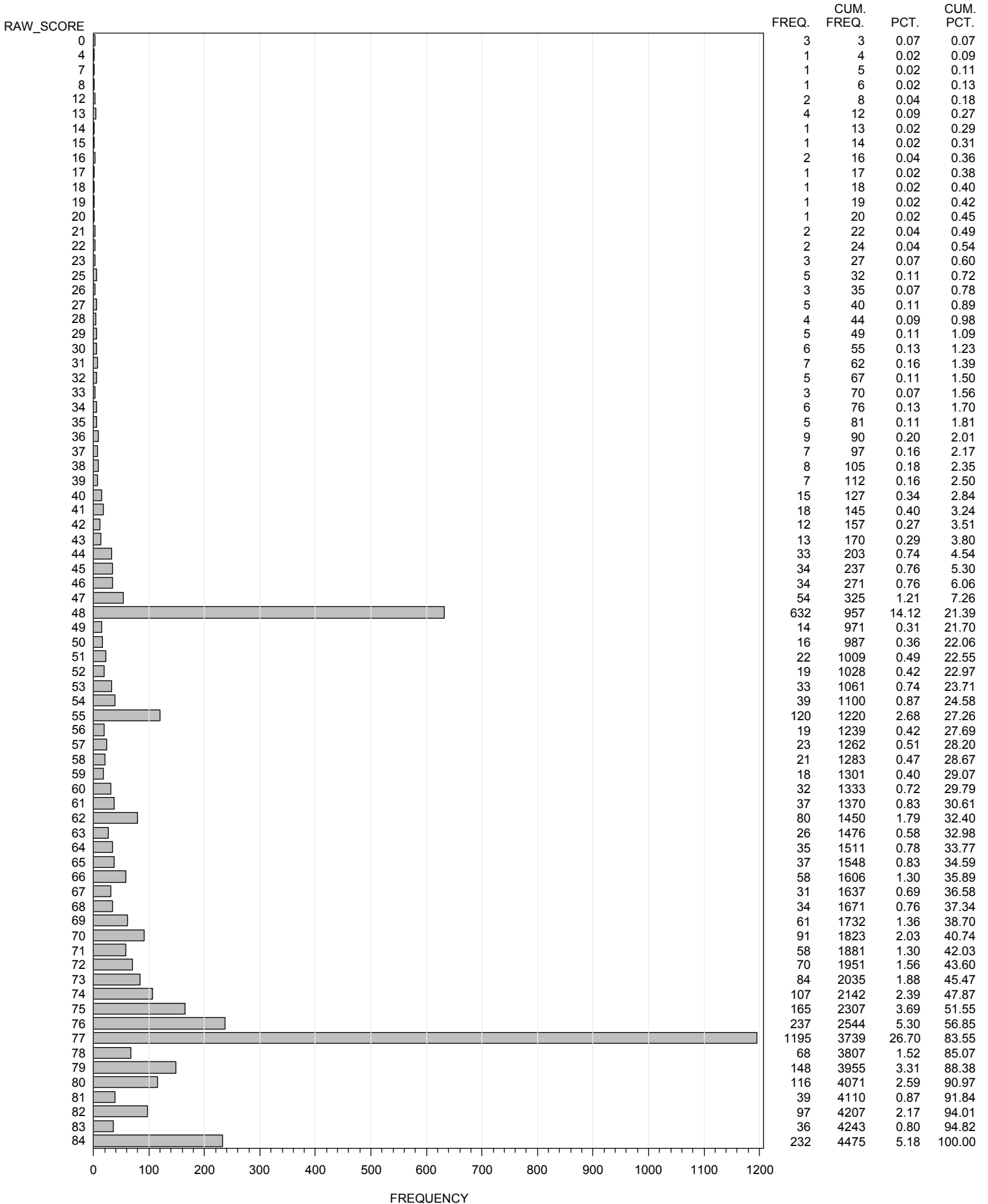
Raw Score Descriptive Statistics for 2014 STAAR Alternate EOC Assessments

Subject	N	Mean	Median	Mode	Interquartile		SD	Variance	Skewness	Kurtosis
					Range	Range				
ALGEBRA I	3428	64.73	73	77	84	29	15.52	240.93	-0.8898	0.2494
ENGLISH I	3460	64.84	73	77	84	29	15.59	242.99	-0.9417	0.5668
ENGLISH II	3095	65.08	73	77	84	29	15.36	236.06	-0.9654	0.5592
BIOLOGY	3341	65.15	74	77	84	29	15.29	233.78	-1.0340	0.8029
U.S. HISTORY	2981	66.36	75	77	84	29	14.68	215.63	-0.9625	0.2802

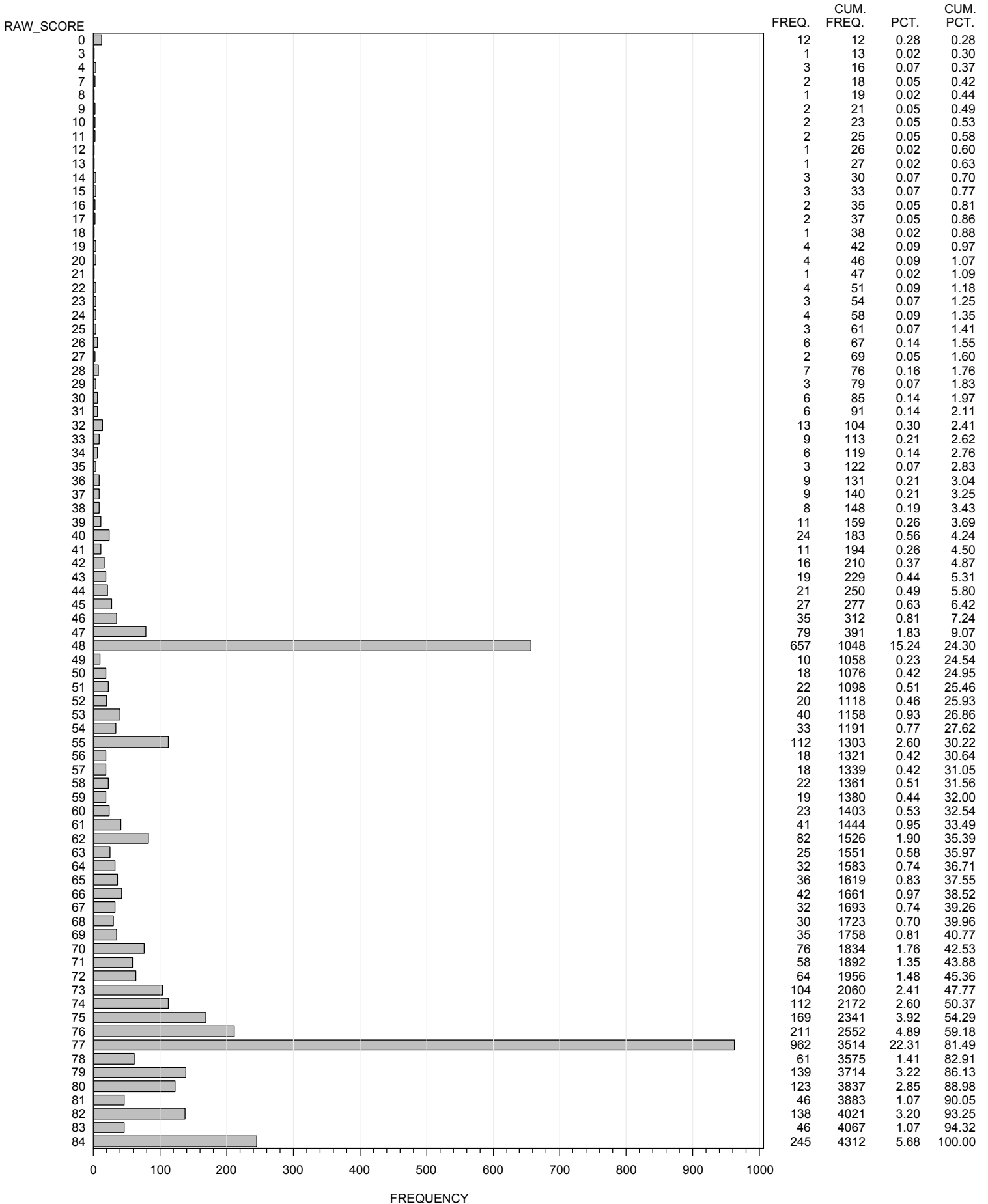
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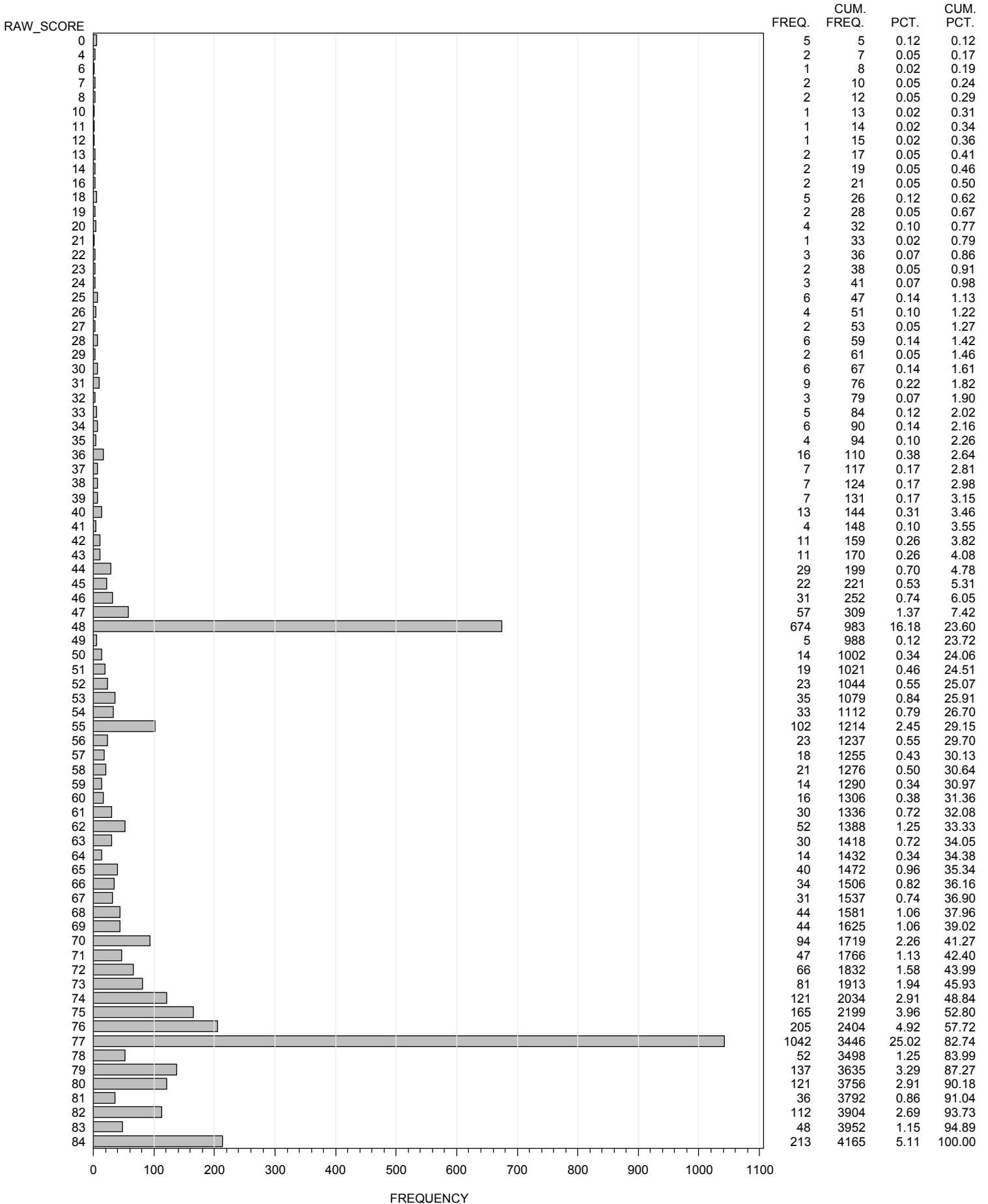
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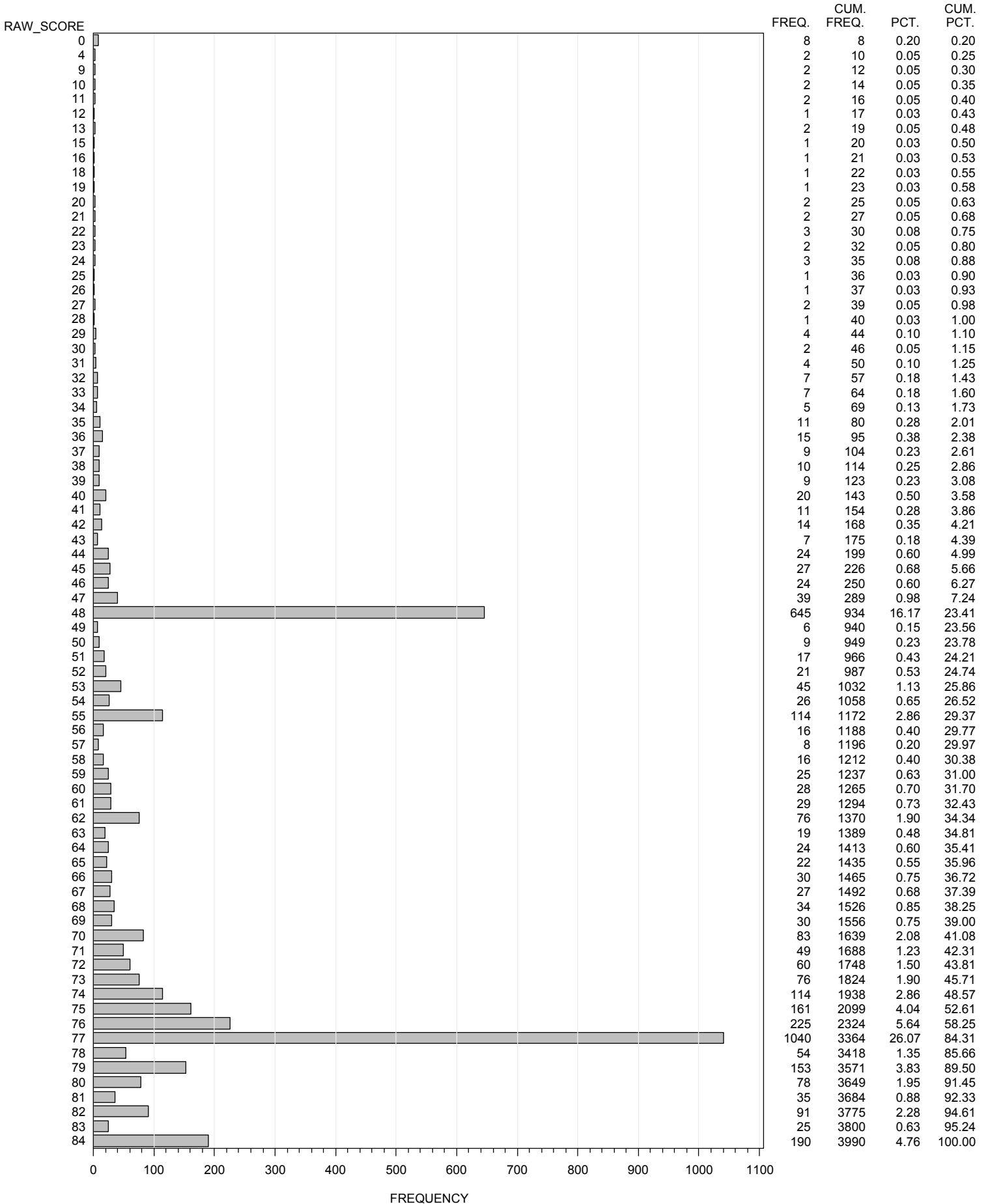
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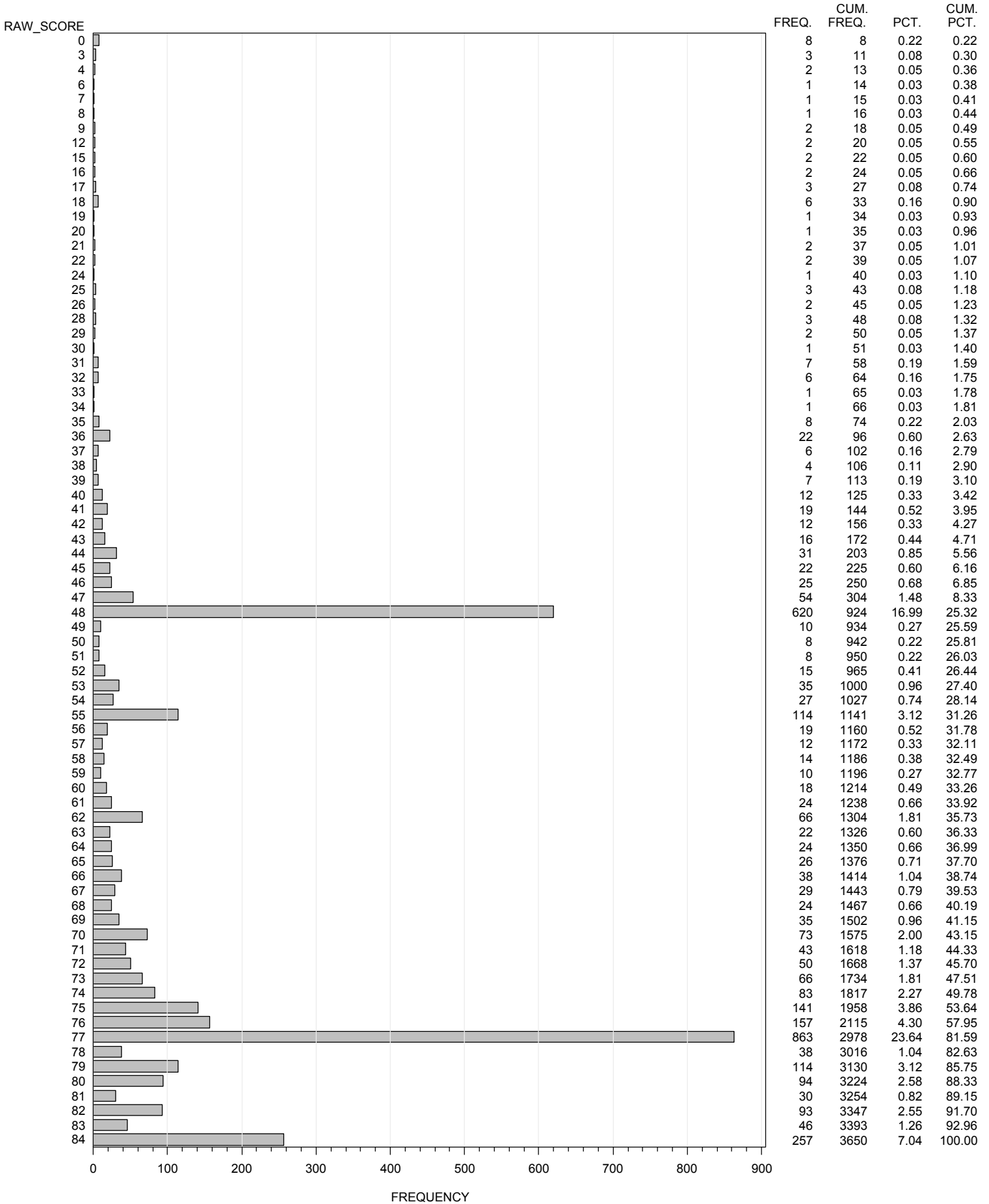
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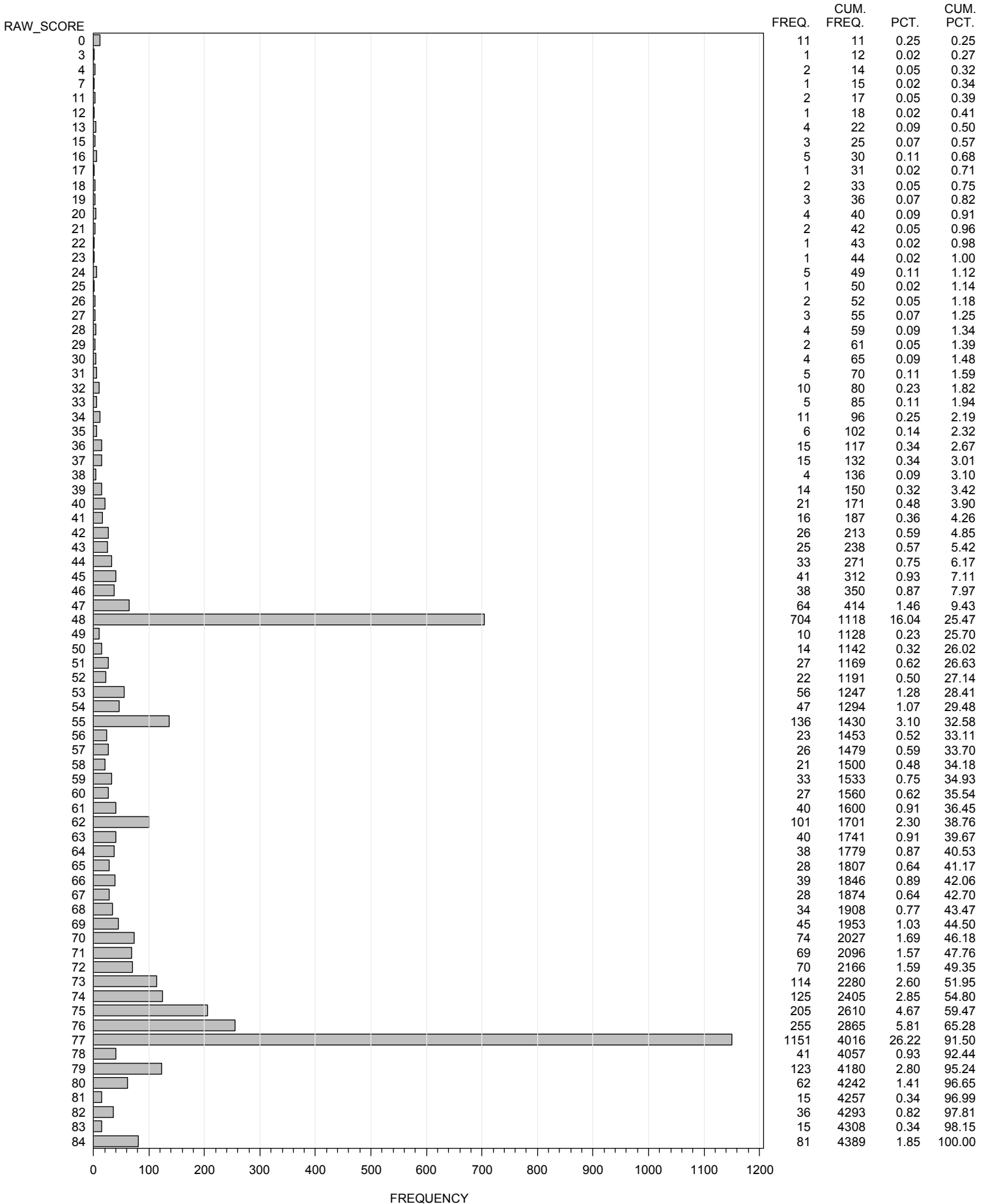
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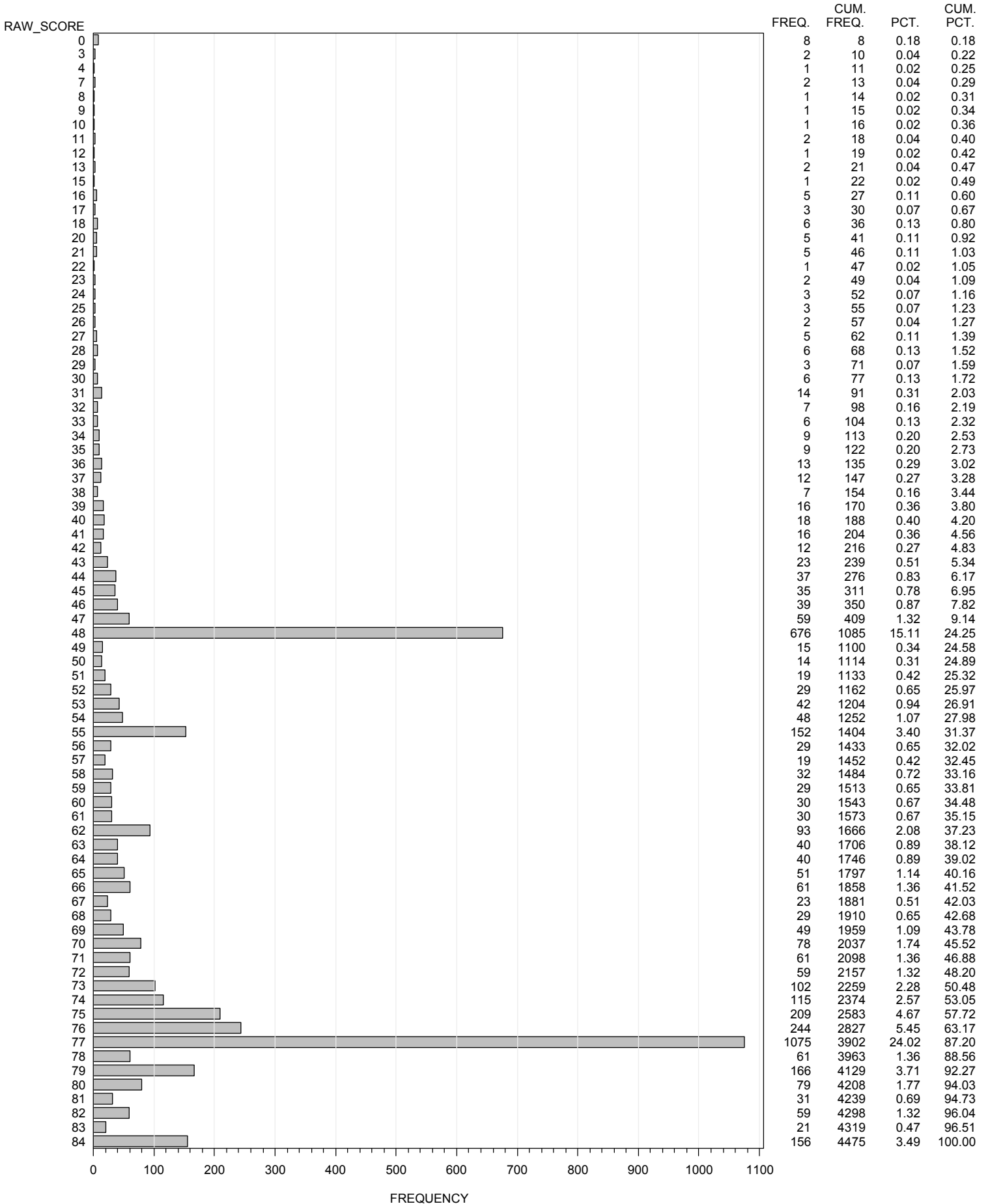
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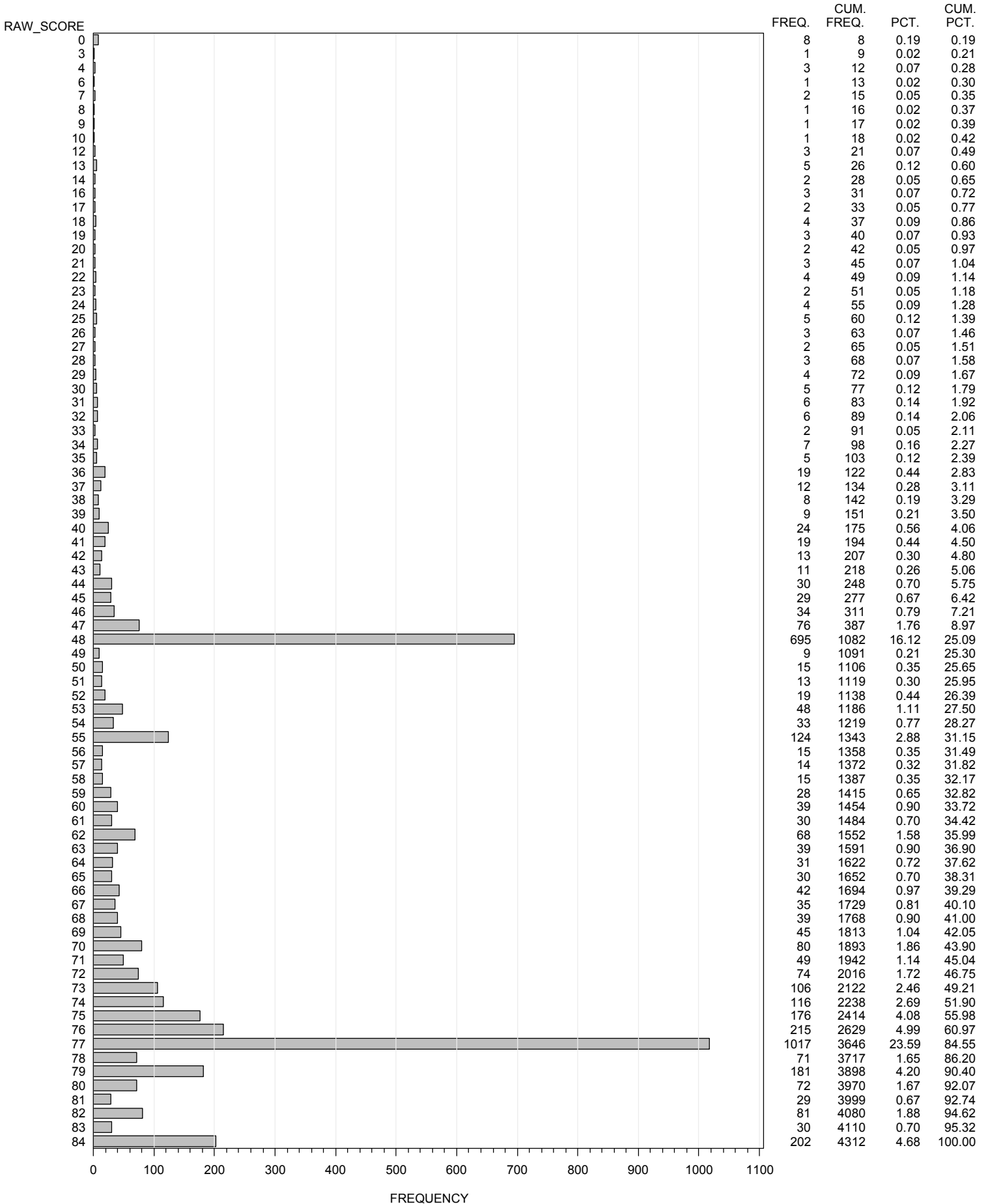
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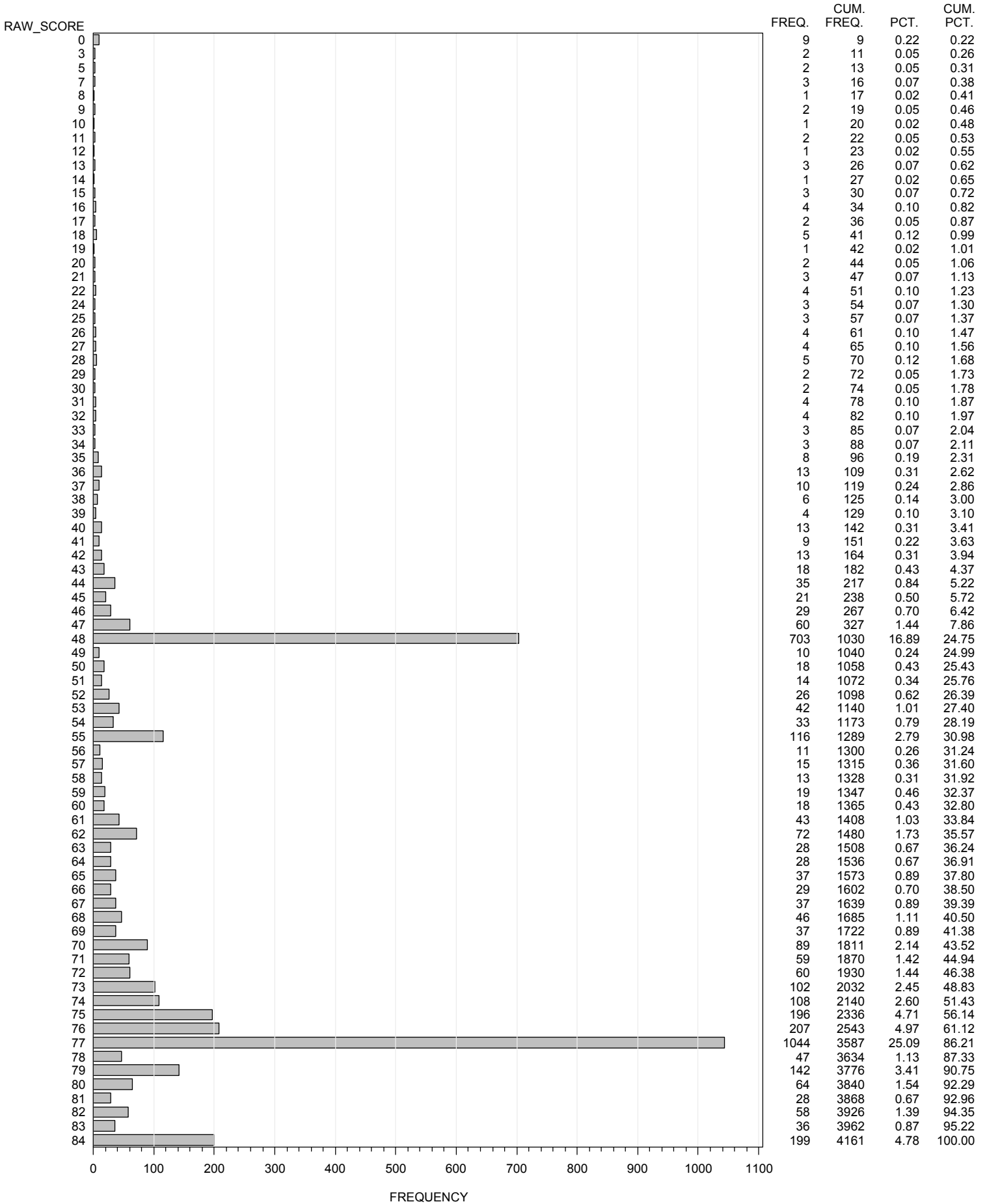
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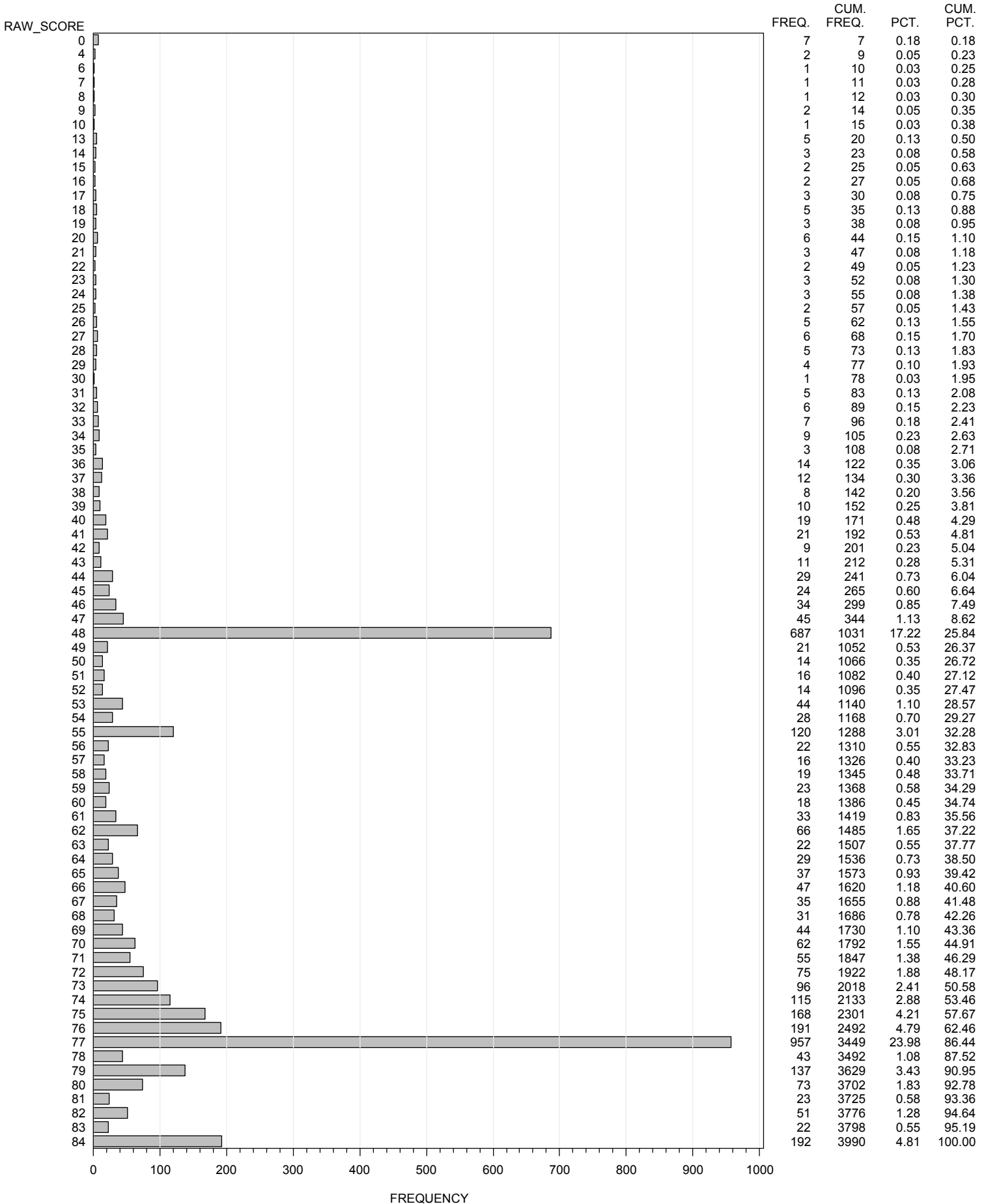
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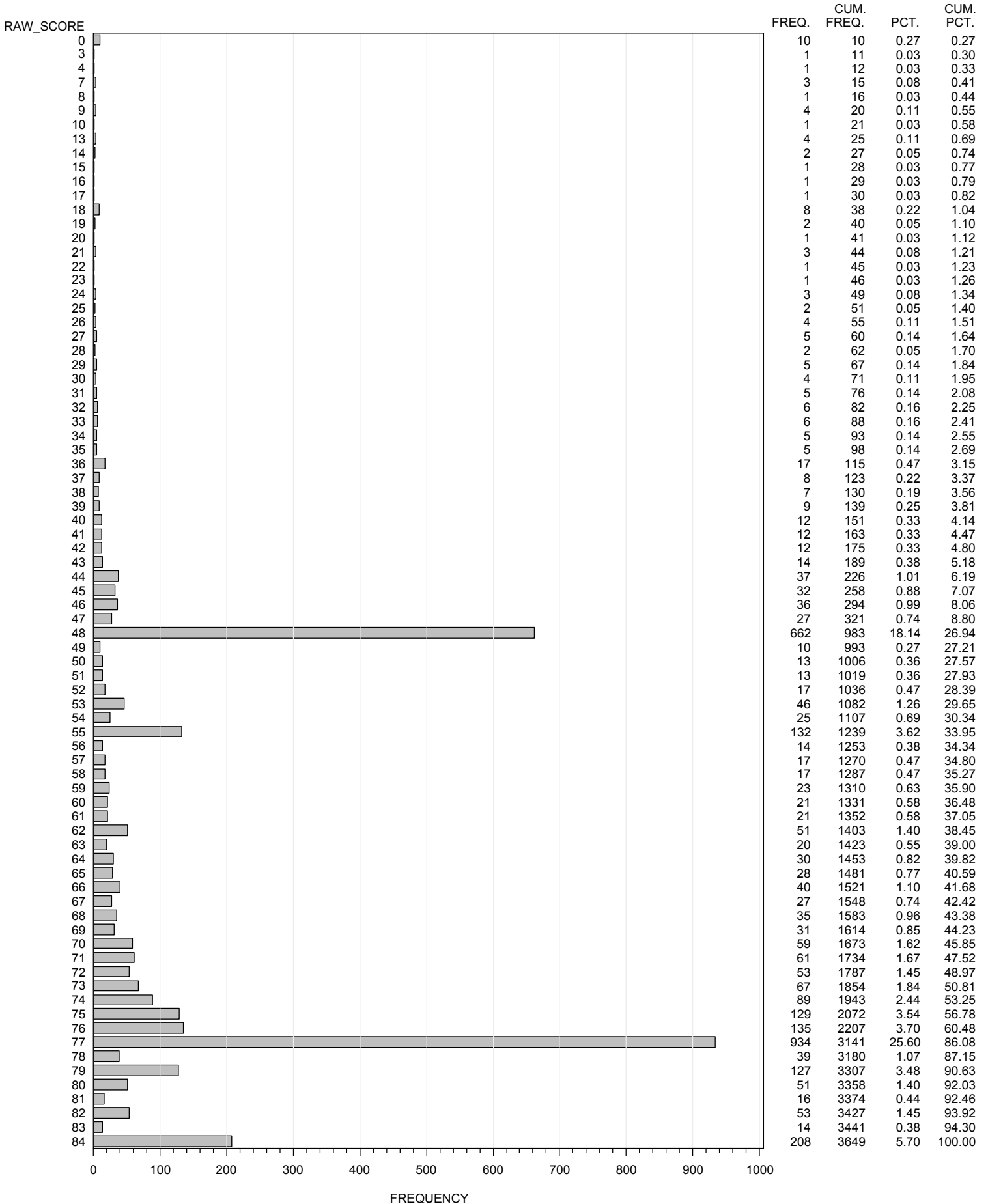
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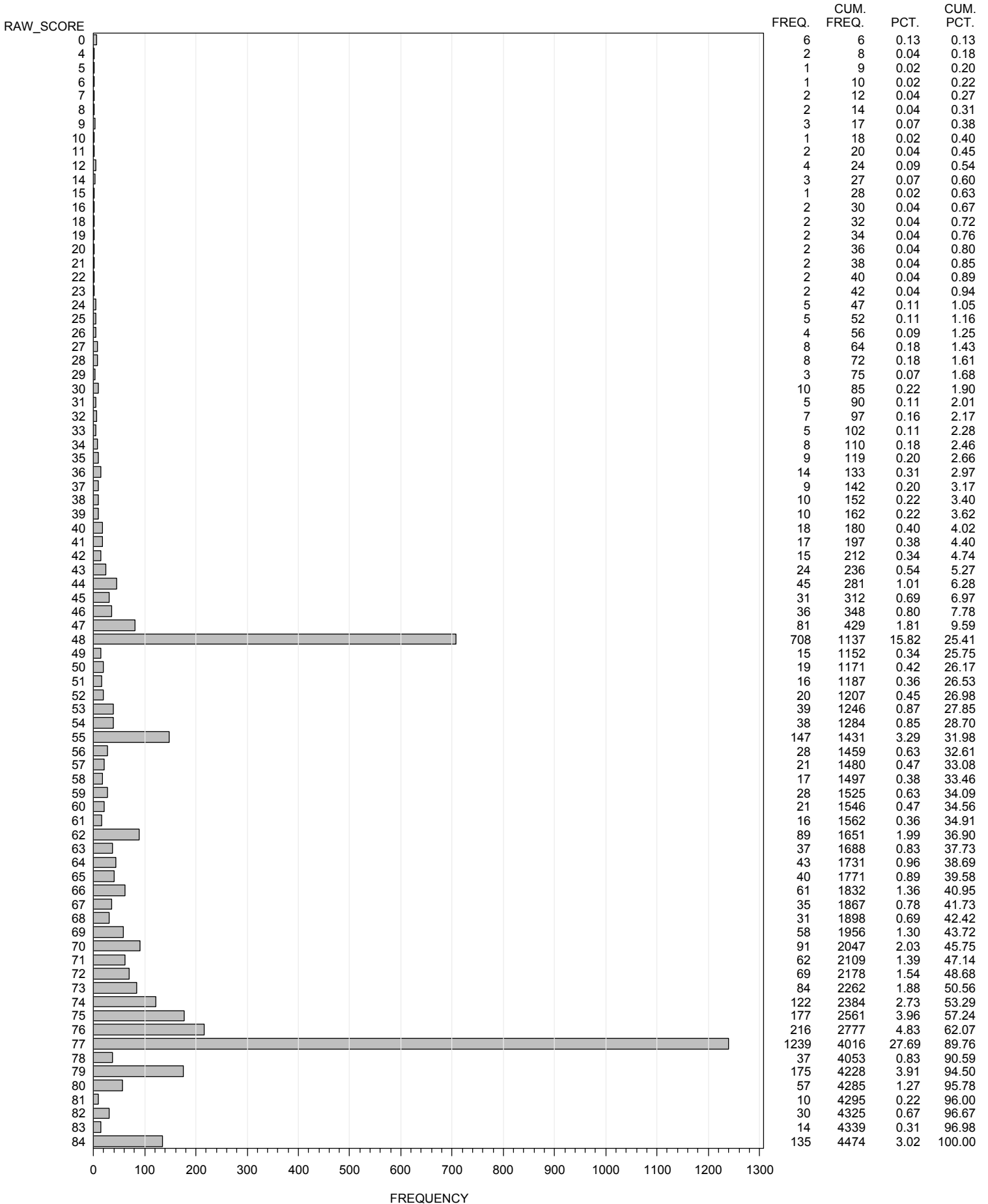
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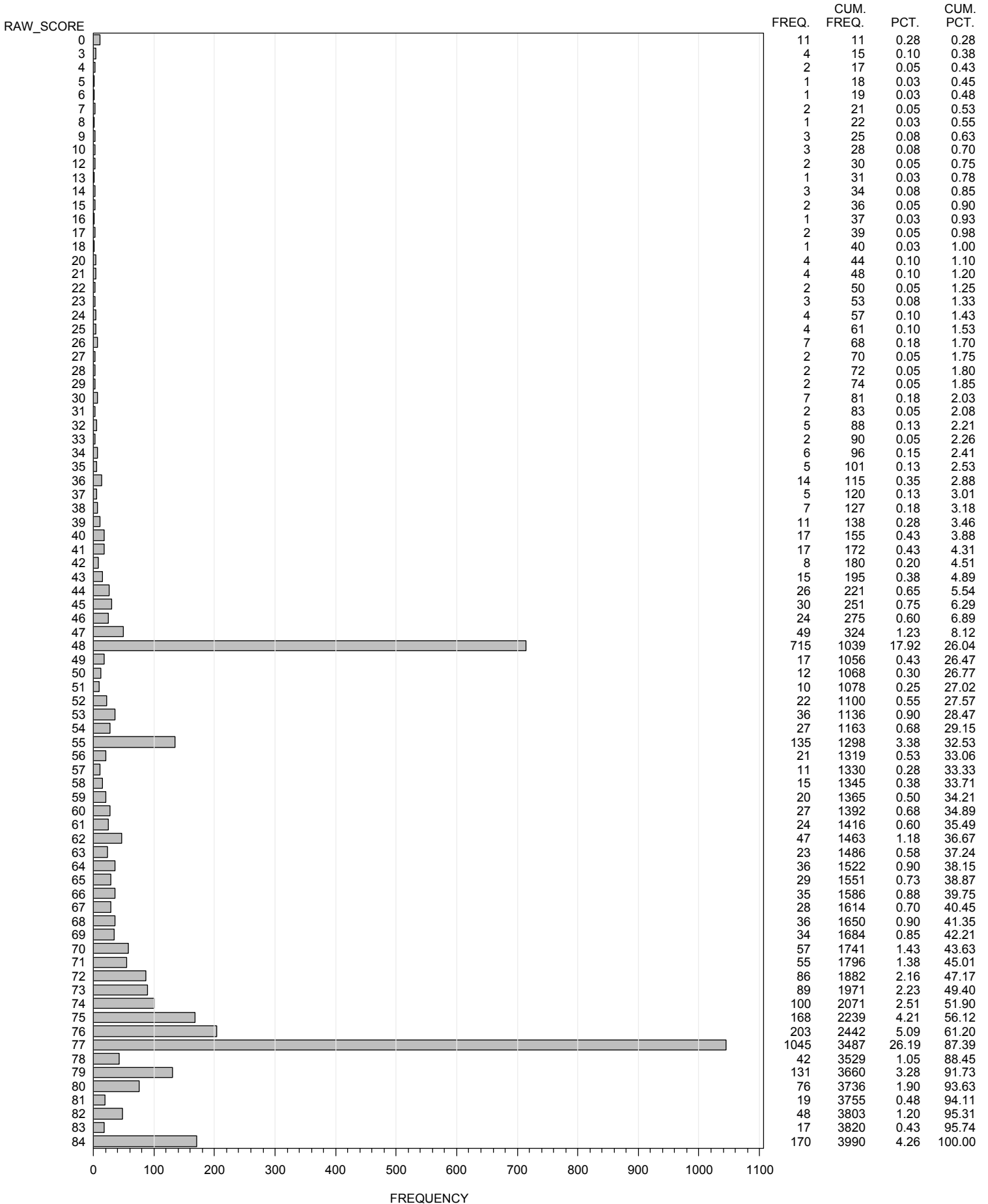
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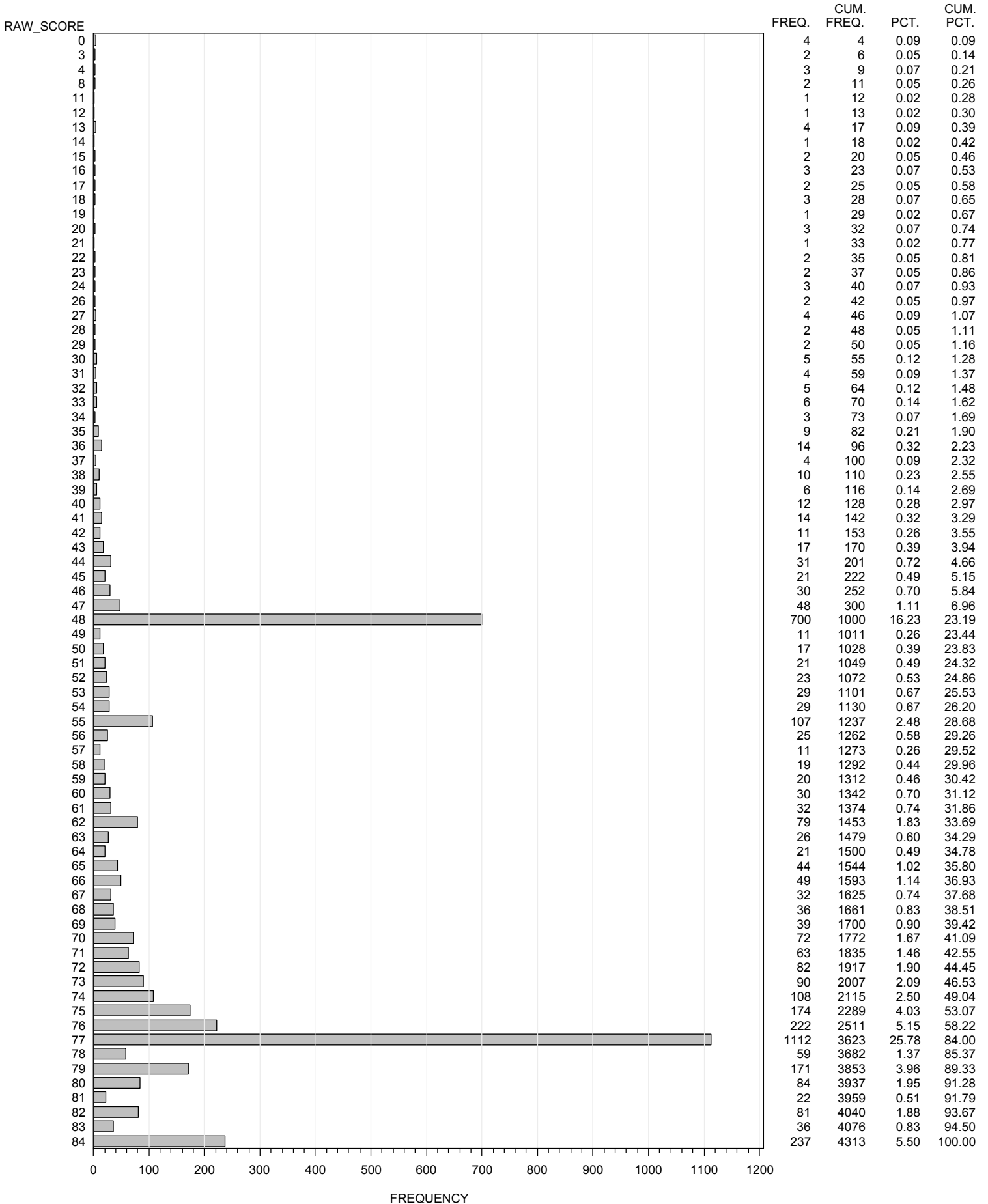
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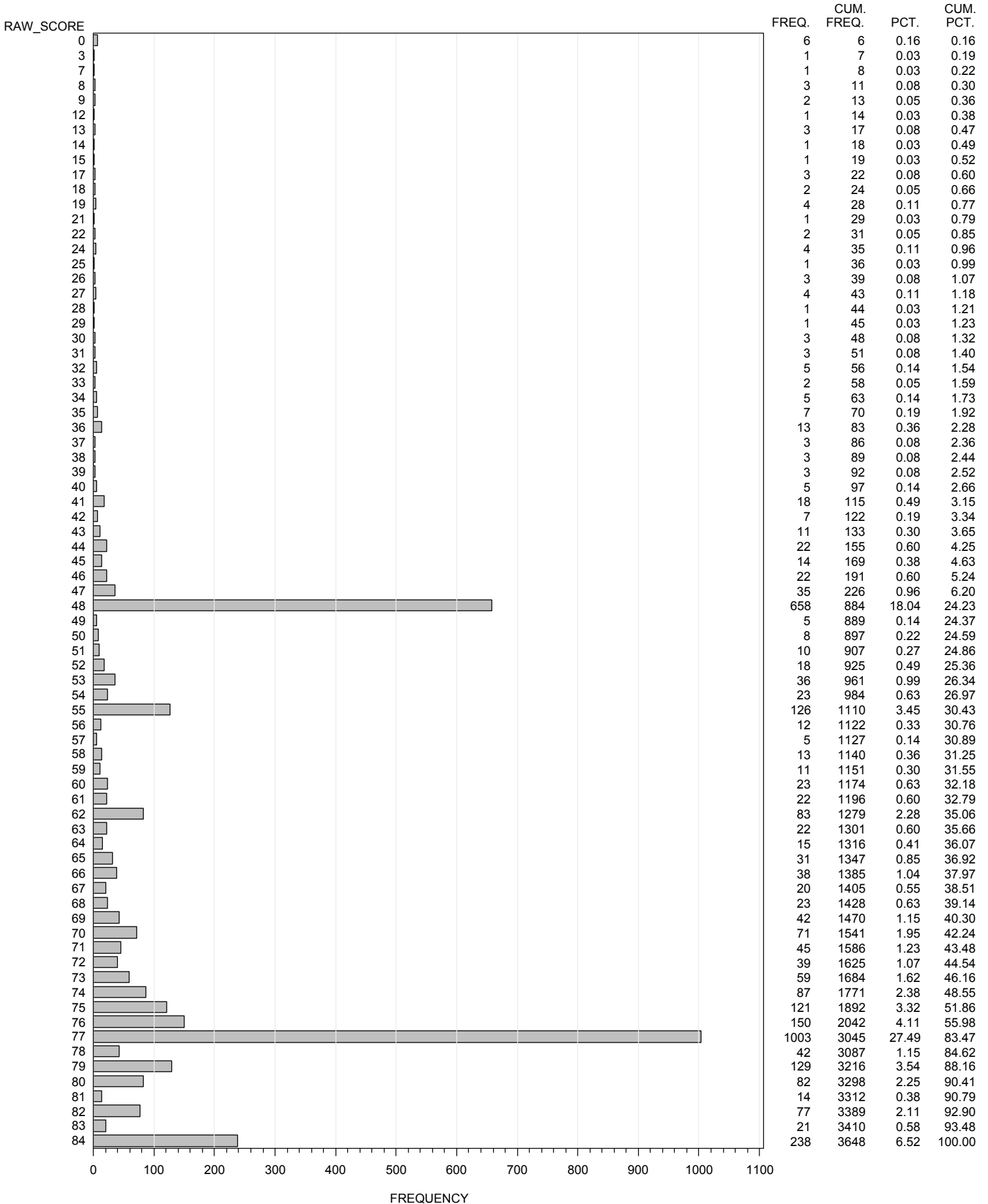
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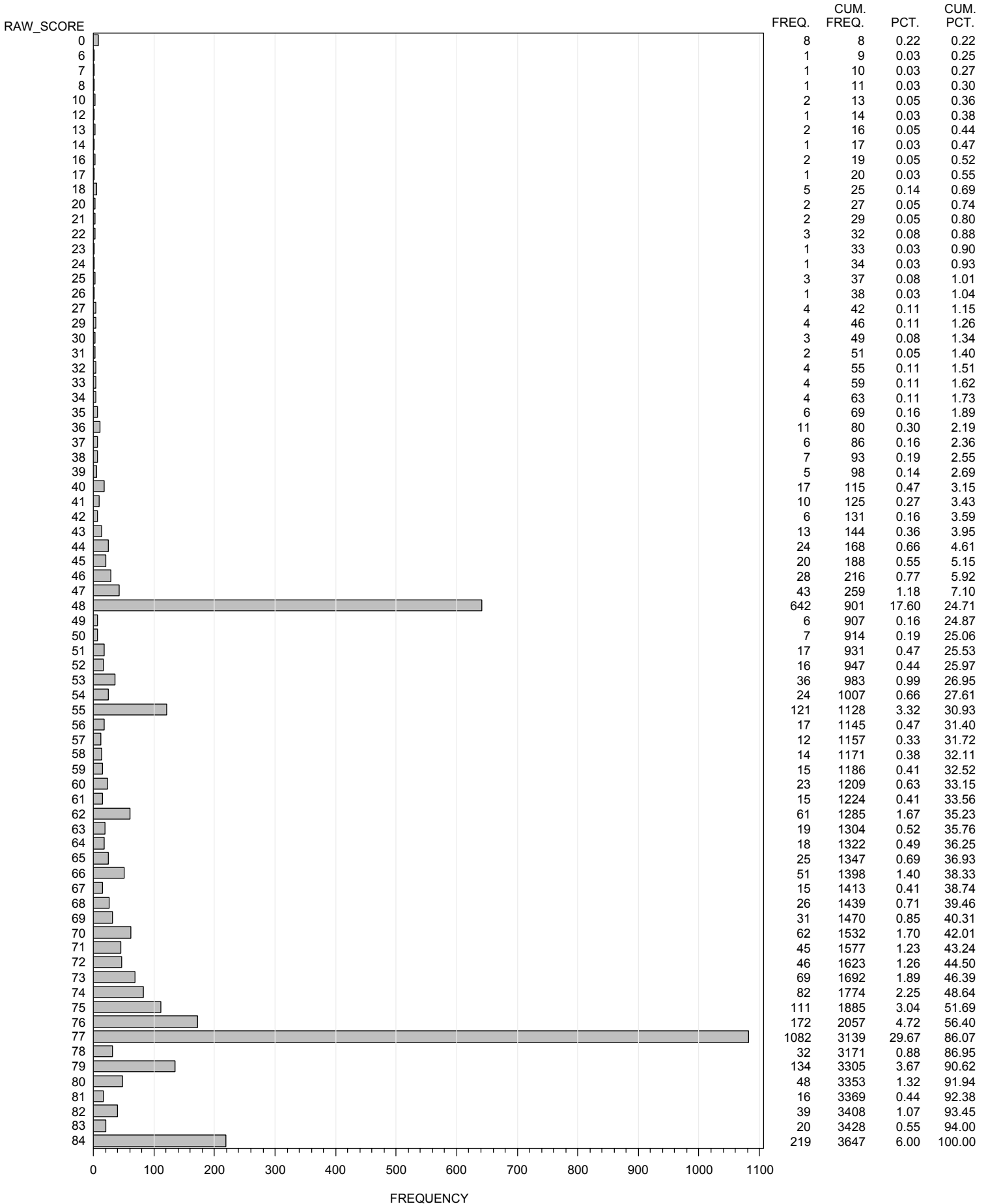
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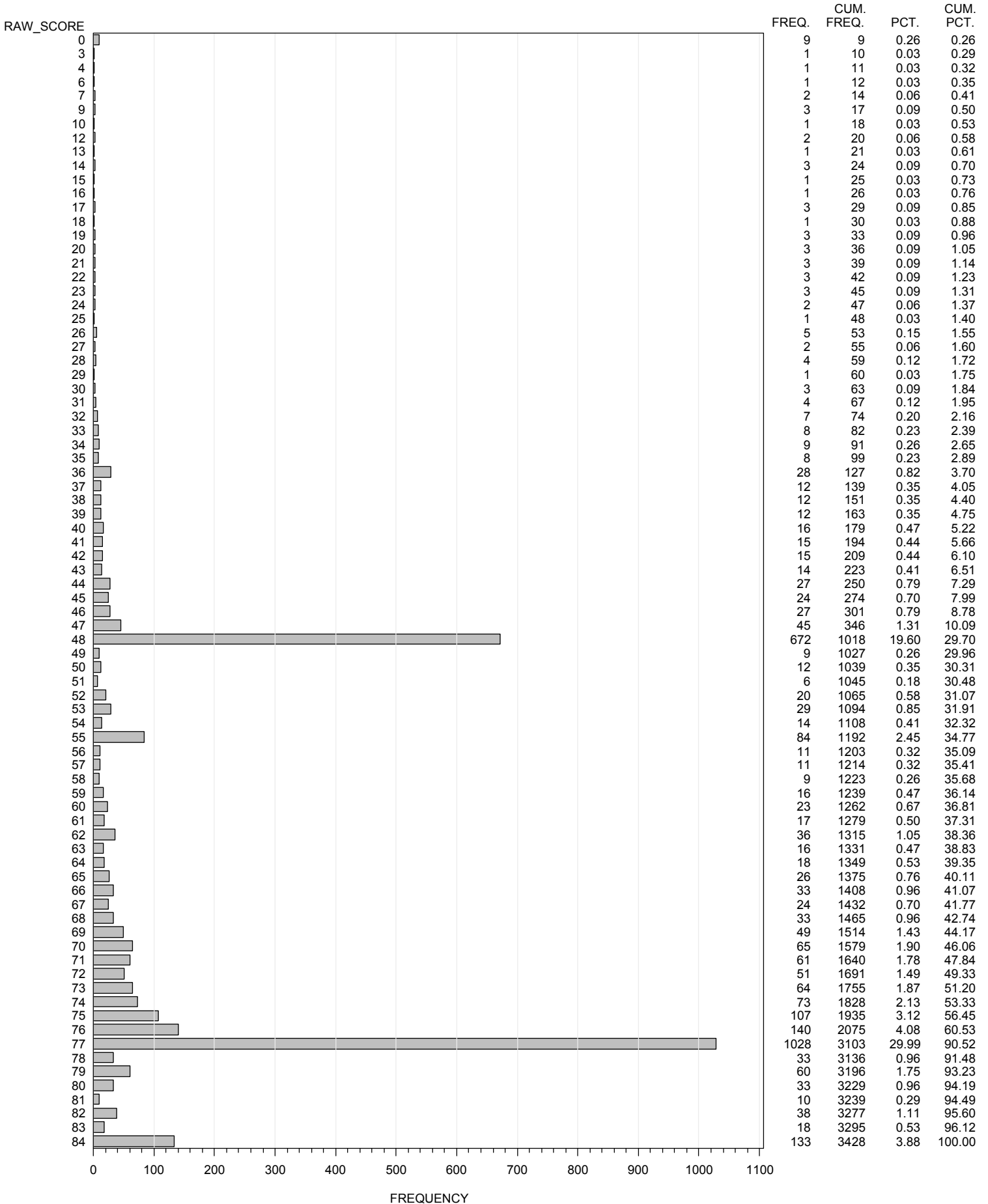
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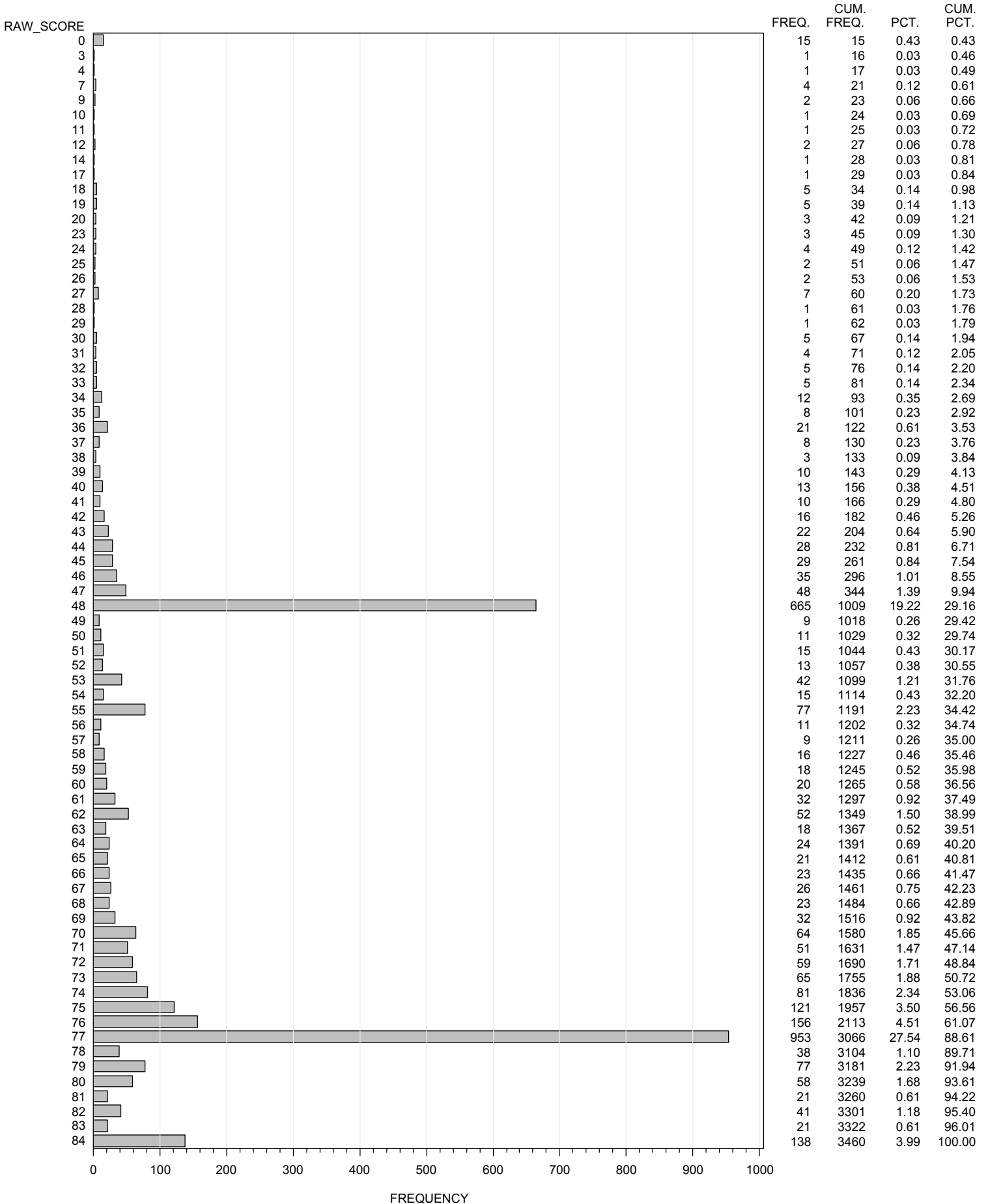
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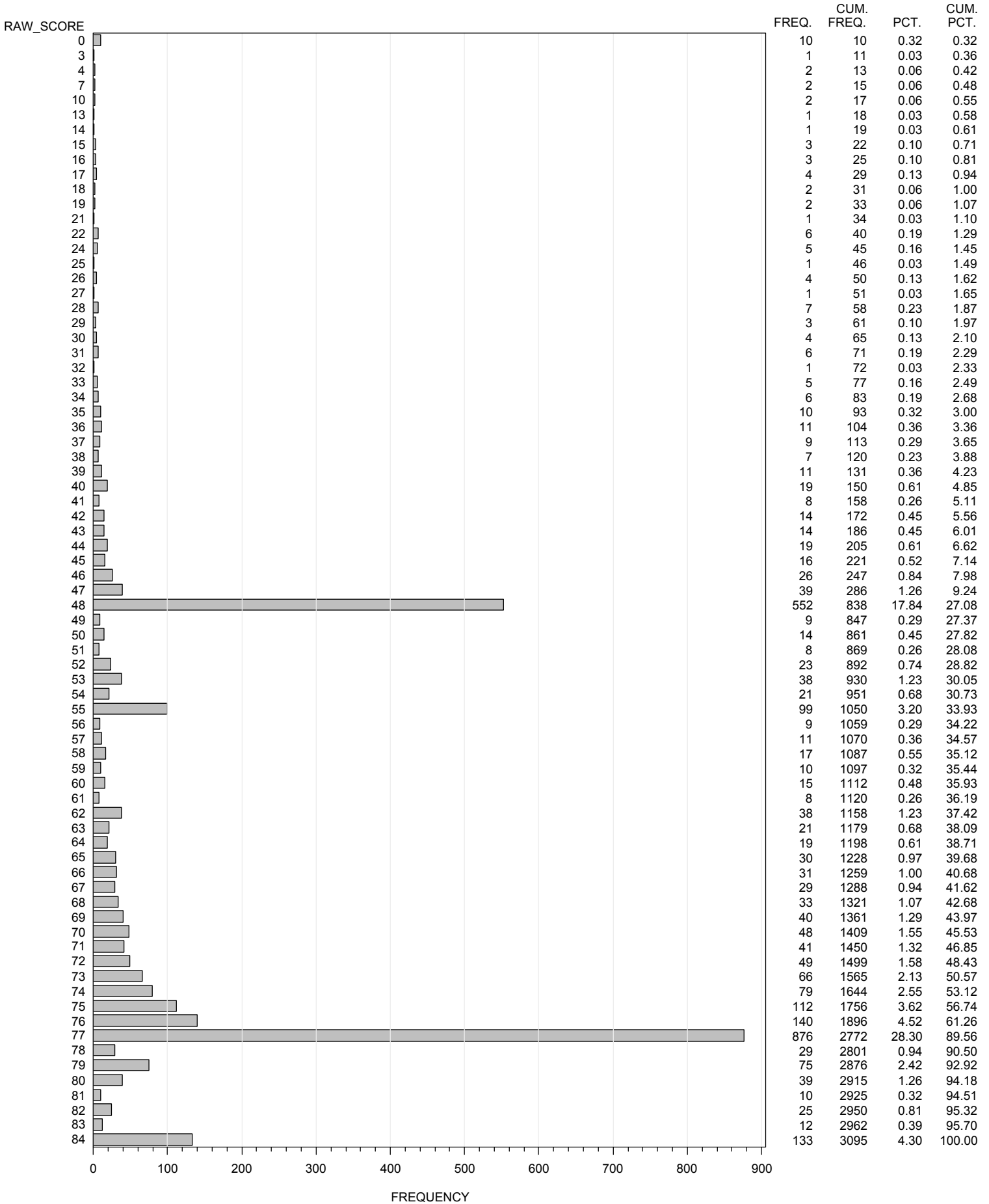
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 ALGEBRA I
 ALL STUDENTS



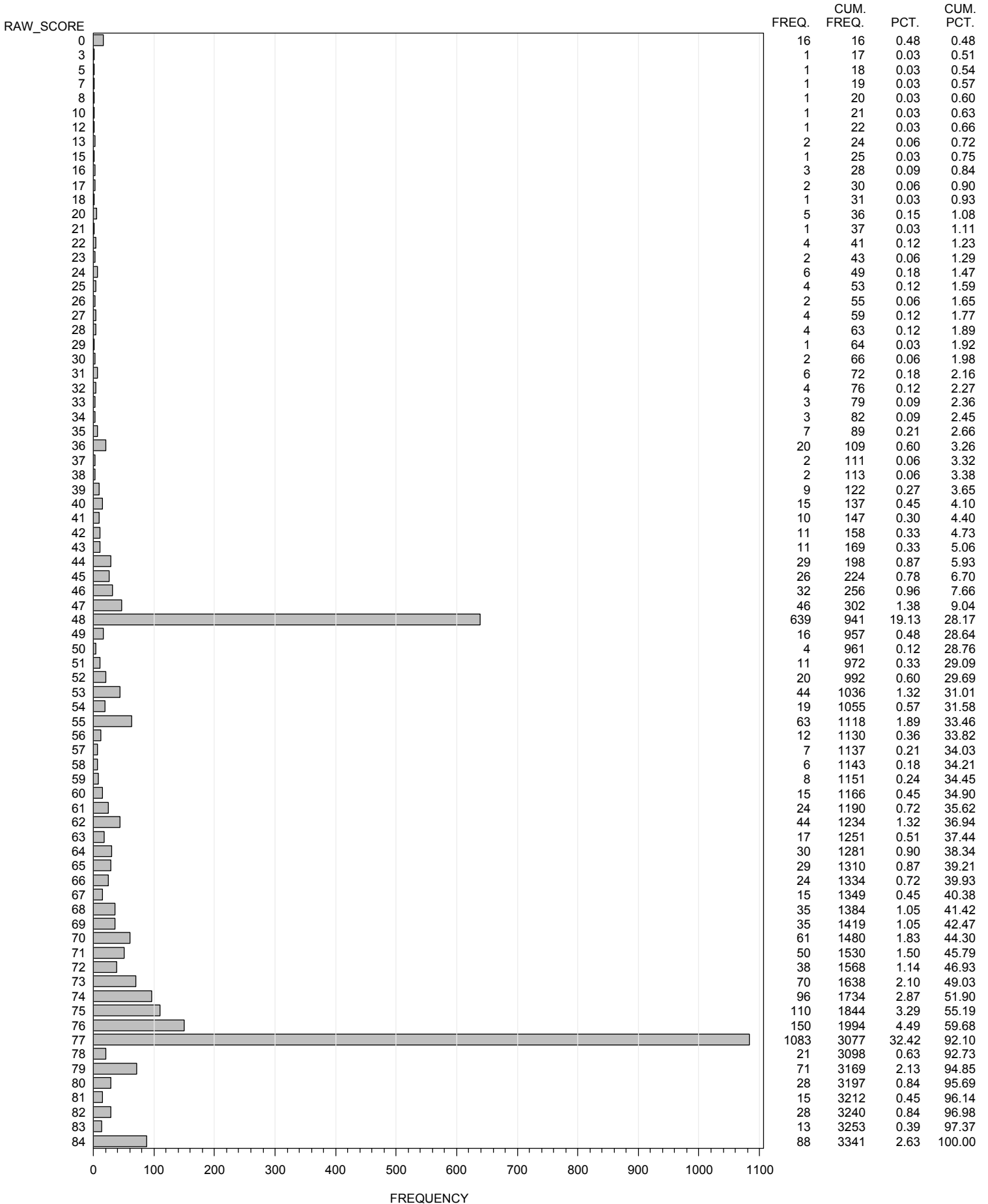
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