



Calculating the Percentage of a Whole [SDE mistakenly calls this a “percentile rank”]

Visualize what a percentage represents. A percentage is an expression of part of the whole. “Nothing” is represented by 0%, and the whole amount is 100%. Everything else is somewhere in between!

For example, say you have 10 apples. If you eat 2 apples, then you have eaten 2 out of the whole 10 apples ($2 / 10 \times 100\% = 20\%$ eaten). If 10 apples is 100% and you ate 20%, then $100\% - 20\% = 80\%$ of the apples remain.

The percentage symbol is merely a format. In statistics, percentages are often left in their base form of 0 - 1, where 1 represents the whole.

<https://www.wikihow.com/Calculate-Percentages>

Calculating the Percentile Rank [this is a “percentile rank,” not a percentage]

$$PR = \left(\frac{f_b + \frac{1}{2} f_w}{N} \right) * 100$$

where:

f_b is the frequency below; the number of scores which are less than the score value of the percentile rank

f_w is the frequency within; the number of scores which have the same value as the score value of the percentile rank

N is the number of scores

-- OR --

In solving Percentile Rank, use the formula:

$$PR = \left[\frac{CF + 0.5F}{n} \right] \times 100$$

where,

PR- percentage rank

CF- cumulative frequency below the given score

F- frequency of the given score

n- number of scores in the distribution