

Lesson Four: Percentile Ranking

Percentiles are used by statisticians to rank scores in order. A high percentile rank means the score is higher while a low percentile rank means the score is near the bottom of the group. An actual percentile rank tells you what percent of the group falls **below** (lower than) the certain rank.

Percentiles are calculated using the formula:

$$\text{Percentile Rank} = \frac{b}{n} \times 100$$

where:

b is the number of scores BELOW the given score, and
n is the total number of scores.

NOTE: If a percentile calculation results in a decimal value, we always round **up** to the next highest whole number. For example, 68.7 becomes the 69th percentile, 15.02 becomes the 16th percentile and 12.0 remains as the 12th percentile.

Example 1

Jenn and Bob just wrote a math test. Jenn scored in the 87th percentile and Bob scored in the 76th percentile. Explain who had the better result.

Jenn had a better result because 87% of the students scored below her's, while 76% of the students scored below Bob's.

Example 2

Gord and Kim both had their blood pressure taken. Gord scored in the 99th percentile and Kim scored in the 50th percentile. Explain who had the better result.

Gord has a higher blood pressure. Kim has a better result, because only 50% of the people scored below her. While, 99% has a lower blood pressure than Gord's.

Example 3

Julian scored better than 23 of his classmates. If there are 32 people in the class, calculate Julian's percentile rank. Is there a way to tell what actual mark Julian got on the test?

$$PR = \frac{b}{n} \times 100$$

$b = 23$
 $n = 32$

$$PR = \frac{23}{32} \times 100 = 71.9 \text{ OR } P_{72}$$

We can't tell the actual mark.
 The percentile only tells you the percent of scores below.