

Example 3 The table gives the scores on a high school math contest, ranked from lowest to highest.

Score	5	8	9	11	11	11	13	14	16	17	18	19
Rank	12	11	10	9	8	7	6	5	4	3	2	1

- a. Determine the percentile rank of each score
 - i. 14
 - ii. 11

To find the score that corresponds to a particular percentile:

1. Calculate $n \times p$
2. If $n \times p$ is a whole number:
The position of the score is the mean or average of $n \times p$ and $(n \times p) + 1$

If $n \times p$ is a decimal number:

Round the number up to find the position of the score

3. Find the score using its position by counting *from the lowest score*

Example 4 For the contest scores in Example 3, which score is in the

- a. 75th percentile?
- b. 95th percentile?

Weighted Mean

A weighted mean is used when each component in a calculation has a different weighting factor.

To calculate a weighted mean: Multiply each value by its weighting factor, add them up, then divide by the sum of the factors.

Example 5 The weightings for the 4 categories of achievement on assessments in this course are: Knowledge 40%, Application 30%, Thinking 15%, and Communication 15%. What is your overall mark if you get a test back with the following result:

K: 2- A: 3 T: 3+ C: 2