Answer on Question #80977 – Math – Statistics and Probability

Question

One sample has a mean of M=8 and a second sample has a mean of M=16. The two samples are combined into a single set of scores.

A) what is the mean for the combined set if both of the original samples have n=4 scores?

B) what is the mean for the combined set if the first sample has n=3 and the second sample has n=5

C) what is the mean for the combined set if the first sample has n=5 and the second sample has n=3

Solution

If $\bar{X}$ is a mean of sample X with the sample size n_X and $\bar{Y}$ is a mean of sample Y with the sample size n_Y, then the mean for the combined set is calculated by the following formula:

$$M = \frac{\bar{X} \cdot n_X + \bar{Y} \cdot n_Y}{n_X + n_Y}$$

Therefore,

a) $M = \frac{8 \cdot 4 + 16 \cdot 4}{4+4} = 12$

b) $M = \frac{8 \cdot 3 + 16 \cdot 5}{3+5} = 13$

c) $M = \frac{8 \cdot 5 + 16 \cdot 3}{5+3} = 11$