## Answer on Question #85572 – Math – Statistics and Probability

### Question

The arithmetic mean of 10 numbers is 4, when an eleventh number, x is added so that the overall mean is changed to 5. When a twelfth number, y is added the mean changes to 4. Determine the values of x and y

### Solution

Since the arithmetic mean of N numbers is $m = \frac{\sum_{i=1}^{N} x_i}{N}$, then $\sum_{i=1}^{N} x_i = mN.$

Therefore, the sum of 10 numbers is 4 * 10 = 40.
Then the sum of 11 numbers is equal to 5 * 11 = 55.
It follows that ***x*** = 55 – 40 = 15.
The sum of 12 numbers is equal to 4 * 12 = 48.
Then ***y*** = 48 – 55 = -7.

### Answer:

***x*** = 15, ***y*** = -7

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