

ECON221 V26 Quiz 03

For reference, you will find the definition of the mean and the standard deviation. Let $x_1, \dots, x_n$ be a given list of numbers.

- The mean is $\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$.
- The standard deviation is $s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2}$.

Questions

1. (2 points) Let c be some constant. Start from the expression $\frac{1}{n} \sum_{i=1}^n c \cdot x_i$. Expand and show that after simplification, you will obtain $c \cdot \bar{x}$.
2. (1 point) Your midterm score in standard units is -1.5 . The average score was 50 points and the standard deviation was 4 points. What was your score? Make sure to include units if they are appropriate.
3. (2 points) A list of five numbers x_1, x_2, x_3, x_4, x_5 has an average of 6. The first four deviations from the average are 3, 2, -4 , and 0. Can you tell what would x_5 be? Show how you obtained this value or determine what specific additional information you need to be able to obtain this value.

ECON221 V27 Quiz 03

For reference, you will find the definition of the mean and the standard deviation. Let $x_1, \dots, x_n$ be a given list of numbers.

- The mean is $\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$.
- The standard deviation is $s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2}$.

Questions

1. (2 points) Let a be some constant. Start from the expression $\frac{1}{n} \sum_{i=1}^n (x_i + a)$. Expand and show that after simplification, you will obtain $\bar{x} + a$.
2. (1 point) Your midterm score in standard units is -2.5 . The average score was 60 points and the standard deviation was 5 points. What was your score? Make sure to include units if they are appropriate.
3. (2 points) A list of five numbers x_1, x_2, x_3, x_4, x_5 has an average of 5. The first four deviations from the average are 5, 1, -4 , and 2. Can you tell what would x_5 be? Show how you obtained this value or determine what specific additional information you need to be able to obtain this value.