NCERT Solutions Class 11 Maths
Chapter 13: Statistics
Miscellaneous Exercise on Chapter 13

Complete Solutions

Question 1

QUESTION

The mean and variance of eight observations are 9 and 9.25, respectively. If six of the observations are 6, 7, 10, 12, 12 and 13, find the remaining two observations.

ANSWER

4, 8

Question 2

QUESTION

The mean and variance of 7 observations are 8 and 16, respectively. If five of the observations are 2, 4, 10, 12 and 14, find the remaining two observations.

ANSWER

6, 8

Question 3

QUESTION

The mean and standard deviation of six observations are 8 and 4, respectively. If each observation is multiplied by 3, find the new mean and new standard deviation of the resulting observations.

> **ANSWER**
>
> 24, 12

Question 4

QUESTION

Given that $\bar{x}$ is the mean and σ^2 is the variance of n observations $x_1, x_2, ..., x_n$. Prove that the mean and variance of the observations $ax_1, ax_2, ax_3, ..., ax_n$ are $a\bar{x}$ and $a^2\sigma^2$, respectively, where $a \neq 0$.

> **ANSWER**
>
> Mean = $a\bar{x}$, Variance = $a^2\sigma^2$

Question 5

QUESTION

The mean and standard deviation of 20 observations were found to be 10 and 2, respectively. On rechecking, it was found that an observation 8 was incorrect. Calculate the correct mean and standard deviation in each of the following cases:

(i) If wrong item is omitted.

(ii) If it is replaced by 12.

> **ANSWER**
>
> (i) 10.1, 1.99
>
> (ii) 10.2, 1.98

Question 6

QUESTION

The mean and standard deviation of a group of 100 observations were found to be 20 and 3, respectively. Later it was found that three observations were incorrect, which were recorded as 21, 21 and 18. Find the mean and standard deviation if the incorrect observations are omitted.

ANSWER

20, 3.036

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