

Class IX Mathematics assignment – 2013
CHAPTER -14 Statistics and CHAPTER -15 Probability

1. If the mean of the data $x_1, x_2, x_3, \dots, x_n$ is x , What is the mean of $ax_1, ax_2, ax_3, \dots, ax_n$
2. If the mean of five observations is $x, x+2, x+4, x+6, x+8$ is 11. Then find the value of x .
3. If mean of 10 observations is 35 and if 5 is added to each observation, find the new mean.
4. If mean of 5 observation is 30 and each of 5 observation is divided by 6, then find the new mean.
5. The mean of 8 observation is 40. If 5 is added to each observation, find the new mean.
6. Find the mean of first 10 prime numbers.
7. If the median of data arranged in ascending order 31,33,35, x , $x+10$,48,48,50 is 40. Then find the value of x .
8. Median of data 27,29,30,25,36,31,32,40 is 30.5. If 27 is replaced by 45, Find the new median.
9. The mean of marks secured by 100 students was found to be 40. Later on it was discovered that a score of 53 was misread as 83. Find the correct mean.

*10. If x is the mean of n observations $x_1, x_2, x_3, \dots, x_n$. Then $\sum_{i=1}^n (x_i - x)$ is ?

11. If the mean of the following distribution is 6, find the value of P .

| | | | | | |
|---|---|---|---|----|-------|
| X | 2 | 4 | 6 | 10 | $P+5$ |
| F | 3 | 2 | 3 | 1 | 2 |

12. Find the mean, median, mode of the following data :

| | | | | | | | | | |
|-----------|----|----|----|----|----|----|----|----|-------|
| Marks | 20 | 22 | 25 | 30 | 35 | 39 | 45 | 50 | Total |
| Frequency | 4 | 6 | 8 | 10 | 8 | 7 | 5 | 2 | 50 |

13. Draw a histogram for the marks of students given :

| | | | | | |
|-----------------|--------|---------|---------|---------|---------|
| Marks | 0 - 10 | 10 - 30 | 30 - 45 | 45 - 50 | 50 - 60 |
| No. of students | 8 | 32 | 18 | 10 | 6 |

14. Draw a frequency polygon for the following table :

| | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|
| Scores | 50 - 52 | 47 - 49 | 44 - 46 | 41 - 43 | 38 - 40 | 35 - 37 | 32 - 34 |
| Group A | 4 | 10 | 15 | 18 | 20 | 12 | 13 |
| Group B | 2 | 3 | 4 | 8 | 12 | 17 | 22 |

Probability :

1. The weekly pocket expenses of students are given below :

| Pocket expenses (Rs.) | No. of students |
|-----------------------|-----------------|
| 145 | 7 |
| 140 | 4 |
| 159 | 10 |
| 171 | 6 |
| 158 | 3 |
| 147 | 8 |
| 165 | 12 |

Find the probability that the weekly pocket money of a student is :

- a) Rs. 159 b) More than Rs.159 c) Less than Rs. 159
2. Three coins are tossed simultaneously 150 times with following frequency of different outcome

| Outcomes | 3 heads | 2 heads | 1 head | No head |
|-----------|---------|---------|--------|---------|
| Frequency | 20 | 80 | 30 | 20 |

Compute the probability of getting

- (i) Two heads (ii) at least 2 heads (iii) 3 tails (iv) at most 2 heads
3. A student opens his book and notes down the units digit on the right hand page of his book. He repeats the process for 150 times. The outcomes are recorded as below :

| Digit | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------|---|----|----|----|----|---|----|----|----|----|
| Frequency | 7 | 25 | 16 | 30 | 10 | 4 | 11 | 20 | 15 | 12 |

Based on the above information , find the probability of occurrence of :

- (i) 3 as units digit (ii) 1 or 4 as the units digit (iii) At least 5 as the units digit
4. Two dice are thrown simultaneously 200 times . Each time the sum of numbers appearing on their top is noted and recorded as below :

| Sum | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------|----|----|----|----|----|----|----|---|----|----|----|
| Frequency | 18 | 10 | 26 | 16 | 25 | 29 | 15 | 4 | 24 | 20 | 13 |

If the dice thrown once more , what is the probability of getting a sum :

- (i) 3 (ii) more than 10 (iii) less than or equal to 5
5. Over the past 200 working days , the number of defective parts produced by a machine is given below :

| No.of defective parts | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------------------|----|----|----|----|----|----|----|----|----|---|----|----|----|----|
| Days | 50 | 32 | 22 | 18 | 12 | 12 | 10 | 10 | 10 | 8 | 6 | 6 | 2 | 2 |

Determine the probability that tomorrow's output will have :

- (i) No defective part
(ii) Not more than 5 defective parts
(iii) More than 13 defective parts