

Task # 09

B.W.T Data Science

Shaher Ahmed.

① Mean :-

Calculate the mean of the following numbers, 4, 8, 15, 16, 23, 42

Sol Mean (\bar{x}) = $\frac{4+8+15+16+23+42}{6}$

$$= \frac{108}{6} = 18$$

Mean = 18

② Median :

Find median of following numbers
7, 3, 9, 1, 5

Sol Re-arranging in ascending order,
= 1, 3, 5, 7, 9

Median = middle value = 5.

③ Mode :

Find the mode of following numbers
2, 4, 4, 6, 7, 7, 7, 8

Mode = most frequent No = 7

Mode = 7

Normal Distribution:-

A test score follows a normal distribution with a mean of 75 and standard deviation of 10. What % of scores fall between 65 and 85?

Sol

Mean = 75,
Standard deviation = 10.

65 to 85 is within one standard deviation from the mean.

So, approx 68% of data falls within Range

Binomial Distribution:

A coin is flipped 10 times, what's the probability of getting exactly 6 heads?

Sol

$$P(X=6) = \binom{10}{6} (0.5)^{10}$$

$$= 0.205$$

So, Probability for getting 6 heads is 20%.

Poisson Distribution:-

A call center receives an average of 3 calls per hour, what is the probability of receiving exact 5 calls in an hour.

$$P(X=5) = \frac{3^5 e^{-3}}{5!}$$

$$P(X=5) = 0.1008$$

So, probability of receiving 5 calls per hour is 10%.

Uniform Distribution:-

A random variable X is uniformly distributed between 0 to 10. What is the probability that X is between 3 and 7?

$$P(3 \leq X \leq 7) = \frac{7-3}{10-0}$$

$$P(3 \leq X \leq 7) = 0.4$$

So, probability of X between 3 and 7 is 40%.