

ASSIGNMENTS

CLASS IX (MATHEMATICS)

CHAPTER 11 : CONSTRUCTIONS

Q1 Construct ΔXYZ in which $m\angle Y = 30^\circ$, $m\angle Z = 90^\circ$ and $XY + YZ + ZX = 11$ cm.

Q2 Construct a right triangle whose base is 12 cm and the sum of its hypotenuse and other side is 18 cm.

Q3 Construct an equilateral triangle if its altitude is 6 cm. Give justification for your construction

Q4 : Construct a triangle ABC in which $BC = 7.5$ cm, $\angle B = 45^\circ$ and $AB - AC = g$ and give justification :

1. A triangle if its perimeter is 10.4 cm and two angles are 45° and 120° .
2. A triangle PQR given that $QR = 3$ cm, $\angle PQR = 45^\circ$ and $QP - PR = 2$ cm.
3. A right triangle when one side is 3.5 cm and sum of other sides and the hypotenuse is 5.5 cm.
4. A rhombus whose diagonals are 4 cm and 6 cm in lengths.

CHAPTER 15 : PROBABILITY

Q1 Fifty seeds each were selected at random from 5 bags of seeds, and were kept under standardised conditions favorable to germination. After 20 days, the number of seeds which had germinated in each collection were counted and recorded as follows:

Bags	1	2	3	4	5
NO. of seeds germinated	40	48	42	39	41

What is the probability of

- i. More than 40 seeds germinating in a bag?
- ii. 49 seeds germinating in a bag?
- iii. More than 35 seeds germinating in a bag?

Q2 . Bulbs are packed in cartons each containing 40 bulbs. Seven hundred cartons were examined for defective bulbs and the results are given in the following table:

No, of defective bulbs	0	1	2	3	4	5	6	More than 6
frequency	400	180	48	41	18	8	3	2

One carton was selected at random. What is the probability that it has (i) no defective bulb?

(ii) defective bulbs from 2 to 6?

(iii) defective bulbs less than 4?

Q3 . A recent survey found that the ages of workers in a factory is distributed as follows:

Age (in years)	20 - 29	30-39	40-49	50-59	60 and above
Number of workers	38	27	86	46	3

If a person is selected at random, find the probability that the person is: (i) 40 years or more

(ii) under 40 years (iii) having age from 30 to 39 years (iv) under 60 but over 39 years

Q4 A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box , find the probability that it bears

- (i) a perfect square number (ii) a two digit number
(iii) a number divisible by 5 (iv) a three digit number.

Q5 A bag contains 11 ,12,13,1430 tickets. A ticket is taken out from the bag at random. Find the probability that number on the drawn ticket is

(a) Multiple of 7

(b) Greater than 15 and a multiple of 5.

Q6. A die is thrown once. Find:

(a) P(number 5) (b) P(number 7) (c) P(an even number) (d) P(a number greater than 4)

(e) P(a number less than or equal to 4) (f) P(a prime number)

Q7. A bag contains 10 white, 6 black and 4 red balls. Find probability of getting:

(a) a white ball (b) a black ball (c) not a red ball (d) a white or a red ball

Q8. In a simultaneous toss of two coins, find:

(a) P(2 tails) (b) P(exactly one tail) (c) P(no tails) (d) P(at most one head) (e) P(one head)

Q9. A coin is tossed successively three times. Find probability of getting exactly one head or two heads.

Q10. Three coins are tossed once. Find probability of:

(a) 3 heads (b) exactly 2 heads (c) atleast 2 heads (d) atmost 2 heads

Q11 A bag contains 100 identical tokens, on which numbers 1 to 100 are marked. A token is drawn at random. What is the probability that the number on the token is:

(a) an even number (b) an odd number (c) a multiple of 3 (d) a multiple of 5

(f) a multiple of 3 and 5 (g) a multiple of 3 or 5 (h) a number less than 20