

**Q1 Solve****(28)**

1. A rectangular playground is 420sqmt. If its length is increased by 7m and breadth is decreased by 5m, the area remains the same. Find the length and breadth of playground.
2. The side of one regular hexagon is larger than that of the other regular hexagon by 1cm. If the product of their areas is 243, find sides of both hexagon.
3. If the arithmetic mean and geometric mean are in ratio 5:4 and sum of two numbers is 30 find the numbers.
4. If  $S_6 = 126$  and  $S_3 = 14$  then find  $a$  and  $r$  for a G.P
5. If the difference of the roots of the quadratic equation is 5 and their difference of their cubes is 215, find quadratic equations.
6. Calculate mean using assumed mean method

C.I	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	20	15	35	40	30	10

7. Solve  $\frac{16}{x+y} + \frac{2}{x-y} = 1$ ;  $\frac{8}{x+y} - \frac{12}{x-y} = 7$

**Q 2 Solve****(45)**

1. Tinu takes 9 days more than John to do a certain piece of work. Together they can do the work in 6 days. How many days will Tinu take to do that work.
2. From the same place at 7 a.m 'A' started walking in the north at the speed of 5km/hr. after 1 hour B started cycling in the east at a speed of 16km/hr. at what time they will be at a distance of 52km apart from each other.
3. A two digit number is 6 times sum of its digits. If the digit in the unit's place is increased by 3 and the digits in the tenth's place is decreased by 3 and 18 is added the digits are reversed. Find the number.
4. Two dice are thrown. Find the probability that the product on their upper faces is 12 or the sum of the numbers on their upper faces is 8.
5. If I have certain amount with me. If I give Rs 3 to each student in a class Rs 30 are left with me and if I decide to give Rs 4 to each student then I need Rs 10 more. Find the amount and the number of student.
6. A rectangular metal sheet of length 40cm and breadth 20cm is to be made into an open box of base area 384sqcm by cutting out equal squares from each four corners and then bending up the edges. Find the length of square cut from each corner.
7. There are three men and three women. A committee of two is to be formed. Find the probability that i) at least one man, ii) no woman iii) one man and one woman.
8. Some part of journey of 555 km were completed by a car with a speed of 60km/hr. Then speed is increased by 15km/hr and the journey is completed. If it takes 8 hours to reach, find the time taken and distance covered by 60km/hr.
9. For the following distribution draw a histogram and find mode.

C.I	20-30	30-40	40-50	50-60	Total
Frequency	a	2a	3a	a	70