



15. Find the value of  $k$  if the points  $A(2, 3)$ ,  $B(4, k)$  and  $C(6, -3)$  are collinear.
16. Find the area of the quadrilateral whose vertices are  $A(-5, 7)$ ,  $B(-4, -5)$ ,  $C(-1, -6)$  and  $D(4, 5)$
17. In what ratio does the point  $(-4, 6)$  divide the line segment joining the points  $A(-6, 10)$  and  $B(-3, 8)$ ?
18. Find the coordinates of the points of trisection of the line segment joining the points  $A(2, 2)$  and  $B(-7, 4)$ .
19. If the points  $A(6, 1)$ ,  $B(8, 2)$ ,  $C(9, 4)$  and  $D(p, 3)$  are the vertices of a parallelogram, taken in order, find the value of  $p$ .
20. Consider the following distribution of daily wages of 50 workers of a factory.

Daily wages (in Rs)	100 - 120	120 - 140	140 - 160	160 - 180	180 - 200
Number of workers	12	14	8	6	10

Find the mean daily wages of the workers of the factory by using an appropriate method.

21. Savita and Hamida are friends. What is the probability that both will have (i) different birthdays? (ii) the same birthday?
22. Kevin tosses two different coins simultaneously. What is the probability that he gets at least one head?

**Answer the following:**

**11 x 4 = 44**

23. If two zeros of the polynomial  $f(x) = 2x^4 - 3x^3 - 3x^2 + 6x - 2$  are  $\sqrt{2}$  and  $-\sqrt{2}$ . Find the other zeros.
24. Find the sum of first 24 terms of the list of numbers whose  $n$ th term is  $a_n = 3 + 2n$ .
25. If the 3<sup>rd</sup> and the 9<sup>th</sup> terms of an A.P are 4 and -8 respectively, which term of this A.P is zero?
26. Find the sum of first 15 multiples of 8.

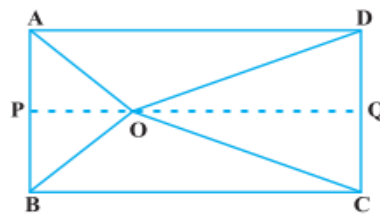
27. In a flower bed, there are 23 rose plants in the first row, 21 in the second, 19 in the third, and so on. There are 5 rose plants in the last row. How many rows are there in the flower bed?
28. A sum of Rs.280 used to award four prizes. If each prize after the first is Rs.20 less than its preceding prize, find the value of each of the prizes.
29. Prove: if a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio. (OR)

State and prove Pythagoras theorem.

30. Construct a triangle with sides 5 cm, 6 cm, 7 cm and then another triangle whose sides are  $\frac{7}{5}$  of the corresponding sides of the triangle. (OR)

Draw a circle of radius 6 cm. From a point 10 cm away from its centre, construct the pair of tangents to the circle and measure their lengths.

31. If O is any point inside a rectangle ABCD.



Prove that  $OB^2 + OD^2 = OA^2 + OC^2$

32. The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

Weight (in kg)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
Number of students	2	3	8	6	6	3	2

33. A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball from the bag is twice that of a red ball, find the number of blue balls.