SNS academy

a fingerprint school Sincerity, Nobility and Service



Class: X

MATHEMATICS

Answer the following :

- 1. Find the zeros of the polynomial $x^2 + 4x$
- 2. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2, respectively.
- 3. Write first four terms of the A.P, when the first term is 4 and the common difference is -3.
- 4. How many two digit numbers are divisible by 3?
- 5. Find the 11^{th} term from the last term of the A.P: 10, 7, 4, ..., -62.
- 6. Find the sum of first 22 terms of the A.P: 8, 3, -2,...
- 7. Find the sum of first 1000 positive integers.
- 8. Determine if the points (1, 5), (2, 3) and (-2, -11) are collinear.
- 9. A box contains 3 blue, 2 white and 4 red marbles. If a marble is drawn at random from the box, what is the probability that it will be (i) white? (ii) blue ?
- 10. Two players, Sangeetha and Reshma, play a tennis match. It is known that the probability of Sangeetha winning the match is 0.62. what is the probability of Reshma winning the match?

Answer the following:

$12 \ge 3 = 36$

- 11. Find the zeros of the polynomial and verify the relationship between the zeros and the coefficients. $6x^2 3 7x$
- 12. Divide $3x^2 x^3 3x + 5$ by $x 1 x^2$ and verify division algorithm.
- 13. Find the relation between x and y such that the points (x, y) is equidistant from the points (7, 1) and (3, 5).
- 14. Find the point on the y-axis which is equidistant from the points A(6,5) and B(-4, 3).

- 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:

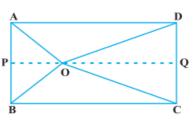
11 x 4 = 44

- 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 nth term is $a_n = 3 + 2n$.
- 25. If the 3rd and the 9th 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. Howmany rows are there in the flower bed?
- 28. A sum of Rs.280 used to award four prizes. If each prize after the first isRs.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.