

Class 10 Maths - 50 Most Important Questions

1. Find the HCF and LCM of 36 and 48 using the prime factorization method.
2. Prove that $\sqrt{2}$ is an irrational number.
3. Find the zeros of the quadratic polynomial $x^2 - 5x + 6$ and verify the relationship between the zeros and coefficients.
4. Solve the pair of equations: $2x + 3y = 12$ and $4x - y = 5$.
5. Find the sum of the first 20 terms of the arithmetic progression 5, 8, 11,
6. Find the distance between the points A(3,4) and B(7,1).
7. Find the midpoint of the line segment joining the points A(-3,5) and B(9,-7).
8. Find the probability of drawing an ace from a deck of 52 playing cards.
9. Find the mode of the data: 3, 3, 6, 6, 6, 7, 8, 8, 9.
10. Find the median of the following numbers: 15, 18, 20, 25, 28, 30, 35.
11. Solve the quadratic equation $x^2 - 7x + 12 = 0$ using factorization.
12. Find the sum of the zeros of the polynomial $f(x) = x^2 - 4x + 3$.
13. Prove that opposite angles of a cyclic quadrilateral are supplementary.
14. A card is drawn from a deck of 52 playing cards. Find the probability of getting a king.
15. Find the value of k if the system of equations $2x + 3y = 7$ and $kx - 6y = 3$ has a unique solution.
16. Find the height of a cone whose volume is 154 cm^3 and base radius is 7 cm.
17. The diameter of a sphere is 14 cm. Find its surface area.
18. The perimeter of a rectangle is 28 cm and its length is 8 cm. Find its breadth.
19. Find the missing term in the arithmetic progression: 3, __, 11, 15, 19.
20. A train travels 120 km at a speed of 40 km/h and another 180 km at 60 km/h. Find the average speed of the train.
21. Find the coordinates of the centroid of a triangle with vertices (2,3), (4,5), and (6,7).
22. Find the probability of getting an even number when a fair six-sided die is rolled.
23. A well with a diameter of 14 m is dug to a depth of 10 m. Find the volume of the soil extracted.
24. Find the coordinates of the point which divides the line segment joining (2,3) and (6,7) in the ratio 3:1.
25. Solve: $3x + 5y = 20$ and $6x - 5y = 10$.
26. Find the mode of the following data: 5, 8, 8, 8, 10, 10, 12, 12, 15.
27. If the sum of the first n terms of an arithmetic progression is $5n^2 + 3n$, find its nth term.
28. Find the area of a sector of a circle with radius 14 cm and central angle 60° .
29. Find the number of terms in the arithmetic sequence 5, 9, 13, ..., 89.
30. Prove that the diagonals of a rhombus bisect each other at right angles.
31. Find the probability of getting at least one head when two coins are tossed.
32. Find the median of the data: 10, 20, 30, 40, 50, 60, 70, 80.
33. Find the probability of getting a prime number when rolling a fair six-sided die.

34. Find the curved surface area of a right circular cone with radius 7 cm and slant height 25 cm.
35. Find the surface area of a sphere with a radius of 5 cm.
36. Find the mode of the following numbers: 10, 12, 12, 12, 15, 15, 18, 20.
37. Prove that the tangent to a circle is perpendicular to the radius at the point of contact.
38. Find the value of k if $x = 3$ is a root of the equation $kx^2 - 5x + 6 = 0$.
39. Find the length of the diagonal of a rectangle with length 9 cm and width 12 cm.
40. A bag contains 4 red, 5 blue, and 6 green balls. Find the probability of drawing a blue ball.
41. Find the distance between the points (2,3) and (-4,-5).
42. Find the equation of a line passing through (2,3) with slope 4.
43. Find the total surface area of a right circular cylinder with radius 7 cm and height 10 cm.
44. Find the value of $\sin 30^\circ + \cos 60^\circ$.
45. Find the volume of a hemisphere with a radius of 6 cm.
46. Find the median of the numbers: 5, 9, 12, 15, 18, 21, 25.
47. Find the area of an equilateral triangle with side 10 cm.
48. Find the mode of the data: 3, 3, 4, 5, 5, 5, 7, 8, 9.
49. Find the total surface area of a cube with side 5 cm.