CBSE Class 10 Mathematics - Important Questions (2025-26)

Session: 2025-26

Max Marks: 80

Time: 3 Hours

General Instructions:

- All questions are compulsory.
- The question paper is divided into four sections - A, B, C, and D.
- Use of a calculator is not permitted.

Section A (1 mark each - 6 questions)

1. Find the HCF of 60 and 72 using the Euclidean algorithm.
2. Write the coordinates of a point on y-axis which is at a distance of 5 units from the origin.
3. Find the value of k if the quadratic equation $2x^2 + kx + 3 = 0$ has equal roots.
4. Write the next term of the A.P. 3, 7, 11, 15, ...
5. Write the coordinates of the centroid of triangle with vertices (1, 2), (3, 4), and (5, 6).
6. Find the distance between the points (2, -3) and (2, 2).

Section B (2 marks each - 6 questions)

7. Find the zeroes of the quadratic polynomial $x^2 - 5x + 6$.
8. The sum of the 5th and 9th terms of an AP is 30. If its first term is 2, find the common difference.
9. A pair of dice is thrown. Find the probability of getting a sum of 9.
10. If the point P(x, 3) lies on the line joining A(2, -1) and B(-1, 2), find the value of x.
11. Draw a pair of tangents from an external point to a circle of radius 4 cm.
12. Find the coordinates of the point which divides the line segment joining (4, -3) and (-2, 1) in the ratio 3 : 1.

Section C (3 marks each - 10 questions)

13. Solve the system of equations: $2x + 3y = 12$ and $x - y = 1$.

14. Find the 20th term of the AP: 6, 13, 20, 27, ...

15. Prove that 2 is irrational.

16. Construct a triangle similar to triangle ABC with scale factor 3:2.

17. From the top of a building 20 m high, the angles of depression of the top and bottom of a tower are 30° and 45°. Find the height of the tower.

18. Find the mode of the following data:

Class: 0-10, 10-20, 20-30, 30-40, 40-50

Frequency: 5, 8, 15, 12, 10

19. A card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting:

(a) a red king

(b) a queen or a jack

(c) a card of spade

20. The sum of the squares of two consecutive odd numbers is 394. Find the numbers.

21. In triangle ABC, D and E are midpoints of sides AB and AC respectively. Show that DE BC and DE = ½ BC.

22. Find the area of a sector of a circle of radius 7 cm and angle 60°.

Section D (4 marks each - 8 questions)

23. A motorcyclist drives from a town A to B at 60 km/h and returns at 40 km/h. Find the average speed.

24. The following table gives the daily income of 50 workers. Calculate the mean using the assumed mean method:

Income (): 0-100, 100-200, 200-300, 300-400, 400-500

Frequency: 5, 10, 15, 10, 10

25. A cylindrical container of radius 7 cm and height 15 cm is full of water. A solid metal sphere of radius 3.5 cm is submerged into the cylinder. Find the rise in water level.

26. A bucket is in the form of a frustum of a cone. The radii of the top and bottom are 24 cm and 12 cm, and the height is 16 cm. Find the surface area of the bucket.

27. Draw a histogram for the following data:

Marks: 0-10, 10-20, 20-30, 30-40, 40-50

No. of Students: 4, 8, 10, 5, 3

28. Two different APs have the same common difference. The first term of the first AP is 2, and of the second is 5. Show that the difference between the nth terms is 3.

29. From the top of a hill, the angle of depression of two poles of equal height is found to be 30° and 60°. If the distance between the poles is 100 m, find the height of the hill.

30. Prove: $(1 + \cot^2 A)/(1 + \tan^2 A) = \cot^2 A$