Tripura Board Class 10 2026 Mathematics (Basic) Question Paper

Time Allowed :3 Hours	**Maximum Marks :**80	**Total questions :**32

Section - A

1. In the AP: $\frac{3}{2}, \frac{1}{2}, -\frac{1}{2}, -\frac{3}{2}, \ldots$, the common difference is:

(A) -1

(B) 2

(C) 1

(D) 4

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2. If the radius of a sphere is 3 cm, then its volume is:

(A) $4\pi r^3$ cm^3

(B) $\frac{4}{3}\pi r^3$ cm^3

(C) $4\pi r^2$ cm^3

(D) $\frac{3}{4}\pi r^3$ cm^3

3. The two roots of the quadratic equation $x^2 - 4 = 0$ are:

(A) 2, 2

(B) -2, 2

(C) -2, -2

(D) 2, 0

4. In the equation $2x - 3y = 5$, if the value of y is 3, then the value of x is:

(A) -7

(B) 14

(C) 7

(D) -14

5. The distance of the point $P(-6, 0)$ from the origin is:

(A) 36

(B) 3

(C) 6

(D) -6

Section - B

6. For what value of k, $x - 3y = 7$ and $kx + 6y = 5$ will have no solution?

7. Find the quadratic polynomial whose sum and product of zeros are 6 and -2 respectively.

OR Find the value of $p(x) = x^2 + x + 1$ when $x = -1$.

8. In the given figure, the angle of elevation of the top of a tower AC from a point B on the ground is $60°$. If the height of the tower is 20m, find the distance of the point from the foot of the tower.

9. A die is thrown once. Find the probability of getting (i) a prime number (ii) an odd number.

10. If the 3rd and the 9th terms of an AP are 4 and -8 respectively, which term of this AP is zero?

11. Find the area of the triangle whose vertices, taken in order are (-4, -2), (-3, -5) & (3, -2).

12. The cost of fencing a circular field at the rate of Rs. 24 per meter is Rs. 5280. The field is ploughed at the rate of Rs. 0.50 per m². Find the cost of ploughing the field. (Take $\pi = \frac{22}{7}$)

13. The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the car is travelling at a speed of 66 km per hour?

14. Prove that the lengths of tangents drawn from an external point to a circle are equal and they subtend equal angles at the center.

15. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line-segment joining the points of contact at the center.

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16. Evaluate $-5\cos^2 60° + 4\sec^2 30° - \tan 45°$

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17. If $\cot\theta = \frac{7}{8}$**, then evaluate**
$$\frac{(1+\sin\theta)(1-\sin\theta)}{(1+\cos\theta)(1-\cos\theta)}$$

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18. Two coins are tossed simultaneously. What is the probability of getting (i) at least one head (ii) no head?

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19. Find the L.C.M of 17, 23, and 29.

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20. If $\tan A = \cot B$**, prove that** $A + B = 90°$**.**