

QUADRATIC EQUATIONS

1. Which of the following quadratic equations has a sum of its roots as 4 ?:
 - (a) $2x^2 - 4x + 8 = 0$
 - (b) $-x^2 - 4x + 4 = 0$
 - (c) $\sqrt{2}x^2 - 4 \div \sqrt{2}x + 1 = 0$
 - (d) $4x^2 - 4x + 4 = 0$
2. If the pair of equations $3x - y + 8 = 0$ and $6x - ry + 16 = 0$ represent coincident lines, then the value of 'r' is?:
 - (a) $\frac{-1}{2}$
 - (b) $\frac{1}{2}$
 - (c) -2
 - (d) 2

GEOMETRY

3. What is the length of the arc of the sector of a circle with radius 14cm and a central angle of 90° :
 - (a) 22cm
 - (b) 44cm
 - (c) 88cm
 - (d) 11cm

SIMILAR TRIANGLES

4. If $\triangle ABC \sim \triangle PQR$ with $\angle A = 32^\circ$ and $\angle R = 65^\circ$, then the measure of $\angle B$ is?:
 - (a) 32°
 - (b) 65°
 - (c) 83°
 - (d) 97°

HCF

5. If p and q are natural numbers and p is a multiple of q , then what is the HCF of p and q ?:
- (a) pq
 - (b) p
 - (c) q
 - (d) $p + q$

CO-ORDINATE GEOMETRY

6. The coordinates of vertex A of a triangle ABCD whose three vertices are given as $B(0, 0)$, $C(3, 0)$, and $D(0, 4)$ are?:
- (a) $(4, 0)$
 - (b) $(0, 3)$
 - (c) $(3, 4)$
 - (d) $(5, 3)$
7. The area of the triangle formed by the line axes is: $\frac{x}{a} + \frac{y}{b} = 1$ with the coordinate axes is:
- (a) ab
 - (b) $\frac{1}{2}ab$
 - (c) $\frac{1}{4}ab$
 - (d) $2ab$

PROBABILITY

8. A Bag Contains 100 Cards Numbered 1 to 100 . A Card Is Drawn At Random From The Bag. What Is The Probability That The Number On The Card Is A Perfect Cube?:
- (a) $\frac{1}{20}$
 - (b) $\frac{3}{50}$
 - (c) $\frac{1}{25}$
 - (d) $\frac{7}{100}$

9. If three coins are tossed simultaneously, what is the probability of getting at most one tail?:
- (a) $\frac{3}{8}$
 - (b) $\frac{4}{8}$
 - (c) $\frac{5}{8}$
 - (d) $\frac{7}{8}$

LINEAR EQUATIONS IN TWO VARIABLES

10. The Pair Of Equations $x = a$ and $y = b$ graphically represents Lines Which Are?:
- (a) *parallel*
 - (b) *intersecting at (b, a)*
 - (c) *coincident*
 - (d) *intersecting at (a, b)*

POLYNOMIAL EQUATIONS

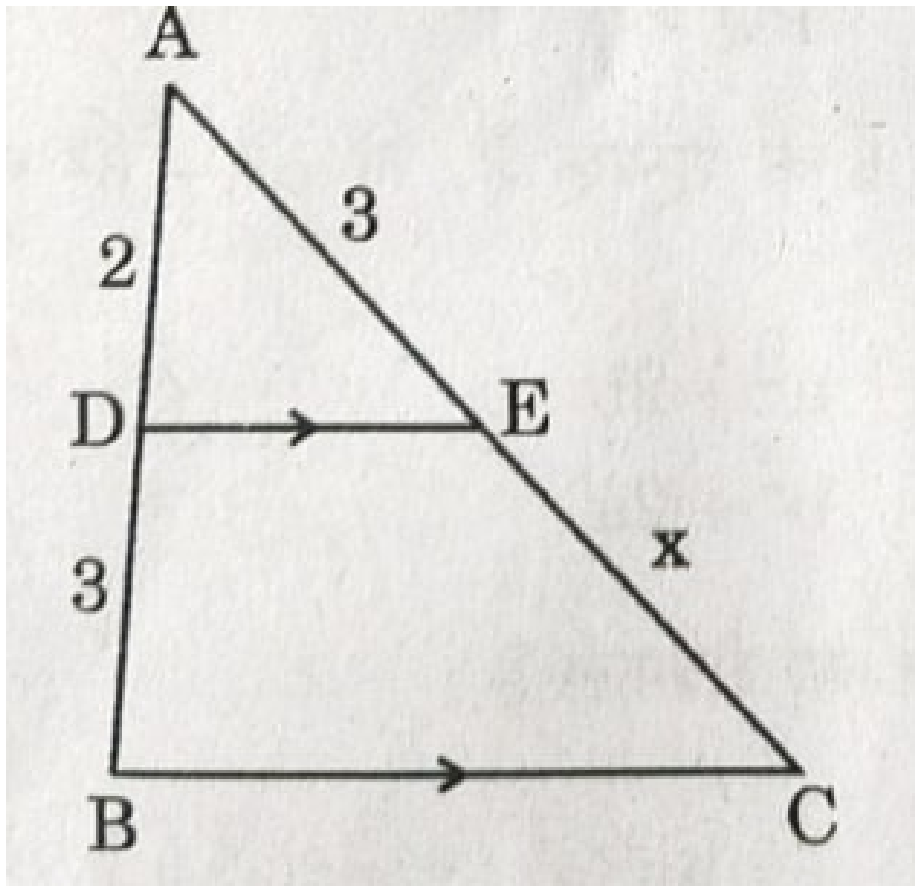
11. If one zero of the polynomial $6x^2 + 37x - (k - 2)$ is the reciprocal of the other, then what is the value of k?:
- (a) -4
 - (b) -6
 - (c) 6
 - (d) 4
12. The zeroes of the polynomial $p(x) = x^2 + 4x + 3$ are given by:
- (a) $(1, 3)$
 - (b) $(-1, 3)$
 - (c) $(1, -3)$
 - (d) $(-1, -3)$

MENSURATION

13. What Is The Total Surface Area Of a Solid Hemisphere Of Diameter 'd'?:
- (a) $3\pi d^2$
 - (b) $2\pi d^2$
 - (c) $\frac{1}{2}\pi d^2$
 - (d) $\frac{3}{4}\pi d^2$

TRIANGLES

14. In the given figure, $DE \parallel BC$. If $AD = 2units$, $DB = AE = 3units$ and $EC = xunits$, then the value of x is:



- (a) 2
- (b) 3
- (c) 5
- (d) $\frac{9}{2}$

15. In the given figure, $AB \parallel PQ$. If $AB = 6\text{cm}$, $PQ = 2\text{cm}$ and $OB = 3\text{cm}$, then the length of OP is:]

- (a) 9cm
- (b) 3cm
- (c) 4cm
- (d) 1cm

AREA OF THE SECTOR OF A CIRCLE

16. The hour-hand of a clock is 6cm long . The angle swept by it between $7 : 20\text{a.m.}$ and $7 : 55\text{a.m.}$ is:

- (a) $\left(\frac{35}{4}\right)^\circ$
- (b) $\left(\frac{35}{2}\right)^\circ$
- (c) 35°
- (d) 70°

LENGTHS OF TANGENTS DRAWN FROM EXTERNAL POINT

17. In the given figure, the quadrilateral PQRS circumscribes a circle. Here $PA + CS$ is equal to:
- (a) QR
 - (b) PR
 - (c) PS
 - (d) PQ

RELATION BETWEEN ZEROES AND CO-EFFICIENTS OF A POLYNOMIAL

18. If a and b are the zeroes of the quadratic polynomial $p(x) = x^2 - ax - b$ then the value of $a^2 + b^2$ is:
- (a) $a^2 - 2b$
 - (b) $a^2 + 2b$
 - (c) $b^2 - 2a$
 - (d) $b^2 + 2a$

TWO STATEMENTS

Questions number 19 and 20 are Assertion and Reason based questions carrying 1 mark each. Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A)
 - (c) Assertion (A) is true, but Reason (R) is false
 - (d) Assertion (A) is false, but Reason (R) is true
19. **Assertion (A):** A tangent to a circle is perpendicular to the radius through the point of contact. **Reason (R):** The lengths of tangents drawn from an external point to a circle are equal.
20. **Assertion (A):** The polynomial $p(x) = x^2 + 3x + 3$ has two real zeroes. **Reason (R):** A quadratic polynomial can have at most two real zeroes

