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UNIQUE STUDY POINT
Mcq : CLASS X
Quadratic equations

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1. Which of the following is not a quadratic equation
(a) $x^2 + 3x - 5 = 0$ (b) $x^2 + x^3 + 2 = 0$ (c) $3 + x + x^2 = 0$ (d) $x^2 - 9 = 0$

2. The quadratic equation has degree
(a) 0 (b) 1 (c) 2 (d) 3

3. The cubic equation has degree
(a) 1 (b) 2 (c) 3 (d) 4

4. A bi-quadratic equation has degree
(a) 1 (b) 2 (c) 3 (d) 4

5. The polynomial equation $x(x + 1) + 8 = (x + 2)\{x - 2)$ is
(a) linear equation (b) quadratic equation (c) cubic equation (d) bi-quadratic equation

6. The equation $(x - 2)^2 + 1 = 2x - 3$ is a
(a) linear equation (b) quadratic equation (c) cubic equation (d) bi-quadratic equation

7. The roots of the quadratic equation $6x^2 - x - 2 = 0$ are
(a) $\frac{2}{3}, \frac{1}{2}$ (b) $-\frac{2}{3}, \frac{1}{2}$
(c) $\frac{2}{3}, -\frac{1}{2}$ (d) $-\frac{2}{3}, -\frac{1}{2}$ Ans : c

8. The quadratic equation whose roots are 1 and
(a) $2x^2 + x - 1 = 0$ (b) $2x^2 - x - 1 = 0$ (c) $2x^2 + x + 1 = 0$ (d) $2x^2 - x + 1 = 0$

9. The quadratic equation whose one rational root is $3 + \sqrt{2}$ is
(a) $x^2 - 7x + 5 = 0$ (b) $x^2 + 7x + 6 = 0$ (c) $x^2 - 7x + 6 = 0$ (d) $x^2 - 6x + 7 = 0$

10. The equation $2x^2 + kx + 3 = 0$ has two equal roots, then the value of k is
(a) $\pm\sqrt{6}$ (b) ± 4 (c) $\pm 3\sqrt{2}$ d) $\pm 2\sqrt{6}$

11. The roots of the quadratic equation $x + \frac{1}{x} = 3$, $x \neq 0$ are.
(a) $3 + \sqrt{5}, 3 - \sqrt{5}$ (b) $2 + \sqrt{5}, 2 - \sqrt{5}$
(c) $\frac{3+\sqrt{5}}{2}, \frac{3-\sqrt{5}}{2}$ (d) $\frac{3+\sqrt{3}}{2}, \frac{3-\sqrt{3}}{2}$ Ans c

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12. The roots of the quadratic equation $2x^2 - 2\sqrt{2}x + 1 = 0$ are

(a) $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$ (b) $\sqrt{2}, \sqrt{2}$

(c) $\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}$ (d) $\sqrt{2}, \frac{1}{\sqrt{2}}$ Ans : c

13. The sum of the roots of the quadratic equation $3\times^2 - 9x + 5 = 0$ is
(a) 3 (b) 6 (c) -3 (d) 2

14. If the roots of $ax^2 + bx + c = 0$ are in the ratio m : n, then
(a) $mna^2 = (m + n) c^2$ (b) $mnb^2 = (m + n)$ ac (c) $mn\ b^2 = (m + n)^2$ ac (d) $mnb^2 = (m - n)^2$ ac

15. If one root of the equation $x^2 + px + 12 = 0$ is 4, while the equation $x^2 + px + q = 0$ has equal roots, the value of q is

(a) $\frac{49}{4}$ (b) $\frac{4}{49}$

(c) 4 (d) 49 Ans : a

16. a and p are the roots of $4x^2 + 3x + 7 = 0$, then the value of $1/\alpha + 1/\beta$ is

(a) $\frac{-3}{4}$ (b) $\frac{-3}{7}$

(c) $\frac{3}{7}$ (d) $\frac{7}{4}$ Ans : b

17. If a, p are the roots of the equation $(x - a)(x - b) + c = 0$, then the roots of the equation $(x - a)(x - P) = c$ are
(a) a, b (b) a, c (c) b, c (d) none of these

18. Mohan and Sohan solve an equation. In solving Mohan commits a mistake in constant term and finds the roots 8 and 2. Sohan commits a mistake in the coefficient of x. The correct roots are
(a) 9,1 (b) -9,1(c) 9, -1 (d) -9, -1

19. If a and p are the roots of the equation $2x^2 - 3x - 6 = 0$. The equation whose roots are 1α and 1β is
(a) $6x^2 - 3x + 2 = 0$ (b) $6x^2 + 3x - 2 = 0$ (c) $6x^2 - 3x - 2 = 0$ (d) $x^2 + 3x-2 = 0$

20. If the roots of px2 + qx + 2 = 0 are reciprocal of each other, then
(a) P = 0 (b) p = -2 (c) p = ±2 (d) p = 2

21. If one root of the quadratic equation $2x^2 + kx - 6 = 0$ is 2, the value of k is
(a) 1 (b) -1 (c) 2 (d) -2

22. The roots of the quadratic equation

$$\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x},\ a + b \neq 0 \text{ is}$$

(a) a, b (b) -a, b (c) a, -b (d) -a, -b

23. The roots of the equation $7x^2 + x - 1 = 0$ are
(a) real and distinct (b) real and equal (c) not real (d) none of these

24. The equation $12x^2 + 4kx + 3 = 0$ has real and equal roots, if
(a) $k = \pm 3$ (b) $k = \pm 9$ (c) $k = 4$ (d) $k = \pm 2$

25. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$, then
(a) $p = 3$ (b) $p = 5$ (c) $p = 7$ (d) $p = 1$

26. If the roots of the equations $ax^2 + 2bx + c = 0$ and $bx^2 - 2\sqrt{ac}\, x + b = 0$ are simultaneously real, then
(a) $b = ac$ (b) $b^2 = ac$ (c) $a^2 = bc$ (d) $c^2 = ab$

27. The roots of the equation $(b - c)\, x^2 + (c - a)\, x + (a - b) = 0$ are equal, then
(a) $2a = b + c$ (b) $2c = a + b$ (c) $b = a + c$ (d) $2b = a + c$

28. A chess board contains 64 equal squares and the area of each square is 6.25 cm^2. A border round the board is 2 cm wide. The length of the side of the chess board is
(a) 8 cm (b) 12 cm (c) 24 cm (d) 36 cm

29. One year ago, a man was 8 times as old as his son. Now his age is equal to the square of his son's age. Their present ages are
(a) 7 years, 49 years (b) 5 years, 25 years (c) 1 years, 50 years (d) 6 years, 49 years

30. The sum of the squares of two consecutive natural numbers is 313. The numbers are
(a) 12, 13 (b) 13,14 (c) 11,12 (d) 14,15