

MATHEMATICS**CLASS -10****Chapter – 4 QUADRATIC EQUATION****“WORKSHEET - 1”***Practice Multiple Choice Questions (20 Questions with Answer Key)*

Q1. Which of the following is a quadratic equation?

- (a) $x^2 + 2x + 1 = (4 - x)^2 + 3$ (b) $-2x^2 = (5 - x)(2 - 2/5 x)$
(c) $(k + 1)x^2 + 3/2 x = 7$ ($k = -1$) (d) $x^3 - x^2 = (x - 1)^3$

Q2. Which of the following is NOT a quadratic equation?

- (a) $2(x - 1)^2 = 4x^2 - 2x + 1$ (b) $2x - x^2 = x^2 + 5$
(c) $(\sqrt{2}x + \sqrt{3})^2 + x^2 = 3x^2 - 5x$ (d) $(x^2 + 2x)^2 = x^4 + 3 + 4x^3$

Q3. If $1/2$ is a root of the equation $x^2 + kx - 5/4 = 0$, then the value of k is:

- (a) 2 (b) -2
(c) $1/4$ (d) $1/2$

Q4. Which of the following equations has 2 as a root?

- (a) $x^2 - 4x + 5 = 0$ (b) $x^2 + 3x - 12 = 0$
(c) $2x^2 - 7x + 6 = 0$ (d) $3x^2 - 6x - 2 = 0$

Q5. If the quadratic equation $x^2 - bx + 1 = 0$ does not possess real roots, then:

- (a) $-3 < b < 3$ (b) $-2 < b < 2$
(c) $b > 2$ (d) $b < -2$

Q6. Values of k for which the quadratic equation $2x^2 - kx + k = 0$ has equal roots is/are:

- (a) 0 only (b) 4
(c) 8 only (d) 0, 8

Q7. The discriminant of the quadratic equation $2x^2 - 4x + 3 = 0$ is:

- (a) -8 (b) 10
(c) -16 (d) 8

Q8. 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

Q9. The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has:

- (a) two distinct real roots (b) two equal real roots
(c) no real roots (d) more than 2 real roots

Q10. Which of the following equations has two distinct real roots?

- (a) $2x^2 - 3\sqrt{2}x + 9/4 = 0$ (b) $x^2 + x - 5 = 0$
(c) $x^2 + 3x + 2\sqrt{2} = 0$ (d) $5x^2 - 3x + 1 = 0$

Q11. Which of the following equations has no real roots?

- (a) $x^2 - 4x + 3\sqrt{2} = 0$ (b) $x^2 + 4x - 3\sqrt{2} = 0$
(c) $x^2 - 4x - 3\sqrt{2} = 0$ (d) $3x^2 + 4\sqrt{3}x + 4 = 0$

Q12. The roots of the quadratic equation $x^2 - 0.04 = 0$ are:

- (a) ± 0.2 (b) ± 0.02
(c) 0.4 (d) 2

Q13. If p and q are the roots of the equation $x^2 - px + q = 0$, then:

- (a) $p = 1, q = 0$ (b) $p = 0, q = 1$
(c) $p = -2, q = 0$ (d) $p = -2, q = 1$

Q14. If the sum of the roots of the equation $kx^2 + 2x + 3k = 0$ is equal to their product, then k = ?

- (a) $1/3$ (b) $-1/3$
(c) $2/3$ (d) $-2/3$

Q15. The quadratic equation $x^2 + 1 = 0$ has:

- (a) two real roots (b) one real root
(c) no real roots (d) infinite real roots

Q16. If α and β are the roots of $2x^2 - 6x + 3 = 0$, then the value of $(\alpha/\beta + \beta/\alpha)$ is:

- (a) 2 (b) 3
(c) 4 (d) 5

Q17. If one root of $px^2 + qx + r = 0$ is reciprocal of the other, then:

- (a) $p = q$ (b) $q = r$
(c) $p = r$ (d) $p + q + r = 0$

Q18. Roots of the quadratic equation $x^2 - 3x - m(m + 3) = 0$ are:

- (a) $m, m + 3$ (b) $-m, m + 3$
(c) $m, -(m + 3)$ (d) $-m, -(m + 3)$

Q19. The condition for the equation $ax^2 + bx + c = 0$ to have equal roots is:

- (a) $b^2 - 4ac > 0$ (b) $b^2 - 4ac = 0$
(c) $b^2 - 4ac < 0$ (d) $b^2 = a c$

Q20. The product of the roots of the quadratic equation $3x^2 - 5x + 2 = 0$ is:

- (a) $5/3$ (b) $2/3$
(c) $-5/3$ (d) $-2/3$

ANSWER KEY & SOLUTIONS GUIDE

Q.No - Ans	Q.No – Ans
Q1: (d) $x^3 - x^2 = (x - 1)^3$	Q11: (a) $x^2 - 4x + 3\sqrt{2} = 0$
Q2: (c) $(\sqrt{2}x + \sqrt{3})^2 + x^2 = 3x^2 - 5x$	Q12: (a) ± 0.2
Q3: (a) 2	Q13: (a) $p = 1, q = 0$
Q4: (c) $2x^2 - 7x + 6 = 0$	Q14: (d) $-2/3$
Q5: (b) $-2 < b < 2$	Q15: (c) no real roots
Q6: (d) 0, 8	Q16: (a) 2
Q7: (a) -8	Q17: (c) $p = r$
Q8: (b) -1	Q18: (b) $-m, m + 3$
Q9: (c) no real roots	Q19: (b) $b^2 - 4ac = 0$
Q10: (b) $x^2 + x - 5 = 0$	Q20: (b) $2/3$