

EduSahara™ Learning Center Assignment**Grade : Class X, SSC****Chapter : Quadratic Equations****Name : Solution of a Quadratic Equation**

1. Find the discriminant of the quadratic equation $(x^2 + 2x - 15) = 0$

(i) 64 (ii) 65 (iii) 63 (iv) 67 (v) 62

2. Find the discriminant of the quadratic equation $(6x^2 - 20x + 16) = 0$

(i) 14 (ii) 17 (iii) 15 (iv) 18 (v) 16

3. Find the discriminant of the quadratic equation $(x^2 - 4x + 17) = 0$

(i) -55 (ii) -52 (iii) -53 (iv) -51 (v) -49

4. Find the discriminant of the quadratic equation $(2x^2 - 4x + 10) = 0$

(i) -63 (ii) -64 (iii) -67 (iv) -62 (v) -65

5. Find the discriminant of the quadratic equation $(x^2 - 10x + 25) = 0$

(i) 2 (ii) -3 (iii) 0 (iv) -1 (v) 1

6. Find the discriminant of the quadratic equation $(4x^2 - 4x + 1) = 0$

(i) 3 (ii) 0 (iii) -2 (iv) -1 (v) 1

7. Find the roots of the quadratic equation $(x^2 - 5x + 6) = 0$

(i) (6, -1) (ii) (6, 1) (iii) (3, 2) (iv) (4, 2) (v) (4, 1)

8. Find the roots of the quadratic equation $(x^2 + 6x + 5) = 0$

(i) (1, -7) (ii) (1, -6) (iii) (0, -6) (iv) (0, -5) (v) (-1, -5)

9. Find the roots of the quadratic equation $(21x^2 + 20x - 25) = 0$

(i) $(1, -3)$ (ii) $(\frac{5}{9}, (\frac{-5}{3}))$ (iii) $(1, (\frac{-7}{3}))$ (iv) $(\frac{5}{9}, -3)$ (v) $(\frac{5}{7}, (\frac{-5}{3}))$

10. Find the roots of the quadratic equation $(24x^2 + 50x + 25) = 0$

(i) $(\frac{-1}{2}, (\frac{-7}{4}))$ (ii) $(\frac{-5}{6}, (\frac{-5}{4}))$ (iii) $(\frac{-5}{8}, (\frac{-3}{2}))$ (iv) $(\frac{-1}{2}, (\frac{-3}{2}))$ (v) $(\frac{-5}{8}, (\frac{-5}{4}))$

11. Solve: $16x^2 - a^2b^2 = 0$

(i) $\frac{ab}{4}, \frac{ab}{2}$ (ii) $-\frac{ab}{6}, \frac{ab}{5}$ (iii) $-\frac{ab}{2}, \frac{ab}{3}$

(iv) $-\frac{3ab}{4}, 0$ (v) $-\frac{ab}{4}, \frac{2ab}{8}$

12. Solve: $30x^2b^2 + 7axb - 15a^2 = 0$

(i) $\frac{a}{b}, -\frac{5a}{4b}$ (ii) $\frac{3a}{7b}, -\frac{5a}{8b}$ (iii) $\frac{3a}{5b}, -\frac{5a}{6b}$

(iv) $\frac{a}{5b}, -\frac{7a}{6b}$ (v) $\frac{a}{b}, -\frac{a}{2b}$

13. Solve: $28x^2 - 17ax - 3a^2 = 0$

(i) $-\frac{a}{9}, \frac{a}{2}$ (ii) $-\frac{3a}{7}, \frac{a}{4}$ (iii) $-\frac{a}{7}, \frac{3a}{4}$

(iv) $\frac{a}{7}, \frac{5a}{4}$ (v) $-\frac{a}{5}, \frac{3a}{2}$

14. Solve: $12x^2 + 4bx - 5b^2 = 0$

(i) $-\frac{b}{2}, -\frac{7b}{6}$ (ii) $\frac{b}{4}, -\frac{5b}{8}$ (iii) $\frac{b}{2}, -\frac{5b}{6}$

(iv) $b, -5b$ (v) $3b, -b$

4 2 2

15. Solve : $14x^2a^2 + 17xa + 5 = 0$

(i) $-\frac{1}{a}, -\frac{3}{2a}$ (ii) $-\frac{1}{a}, -\frac{1}{a}$ (iii) $-\frac{5}{7a}, -\frac{1}{2a}$

(iv) $-\frac{3}{7a}, -\frac{1}{2a}$ (v) $-\frac{5}{9a}, -\frac{1}{4a}$

16. Solve : $81x^2b^2 + 81xb + 8 = 0$

(i) $-\frac{1}{11b}, -\frac{8}{11b}$ (ii) $-\frac{1}{9b}, -\frac{8}{9b}$ (iii) $-\frac{1}{3b}, -\frac{10}{9b}$

(iv) $-\frac{1}{9b}, -\frac{2}{3b}$ (v) $-\frac{1}{7b}, -\frac{8}{7b}$

17. Solve : $40x^2 + 9a^2bx - 10a^4b^2 = 0$

(i) $-\frac{a^2b}{2}, \frac{2a^2b}{7}$ (ii) $-\frac{7a^2b}{8}, 0$ (iii) $-\frac{3a^2b}{8}, \frac{4a^2b}{5}$

(iv) $-\frac{5a^2b}{6}, \frac{2a^2b}{3}$ (v) $-\frac{5a^2b}{8}, \frac{2a^2b}{5}$

18. Solve : $8x^2a^4b^2 + 10xa^2b + 3 = 0$

(i) $-\frac{5}{4a^2b}, -\frac{5}{6a^2b}$ (ii) $-\frac{3}{4a^2b}, -\frac{1}{2a^2b}$ (iii) $-\frac{3}{2a^2b}, -\frac{3}{4a^2b}$

(iv) $-\frac{1}{4a^2b}, -\frac{1}{6a^2b}$ (v) $-\frac{1}{2a^2b}, -\frac{3}{8a^2b}$

19. Solve : $27x^2b^2 + 24a^2xb + 5a^4 = 0$

$$(i) \quad -\frac{5a^2}{11b}, -\frac{a^2}{5b} \quad (ii) \quad -\frac{a^2}{3b}, \frac{a^2}{3b} \quad (iii) \quad -\frac{5a^2}{9b}, -\frac{a^2}{3b}$$

$$(iv) \quad -\frac{7a^2}{9b}, -\frac{a^2}{b} \quad (v) \quad -\frac{5a^2}{7b}, -\frac{a^2}{b}$$

20. Solve : $21x^2a^4 - 22bxa^2 + 5b^2 = 0$

$$(i) \quad \frac{5b}{9a^2}, \frac{b}{5a^2} \quad (ii) \quad \frac{3b}{7a^2}, -\frac{b}{3a^2} \quad (iii) \quad \frac{b}{a^2}, \frac{b}{a^2}$$

$$(iv) \quad \frac{5b}{7a^2}, \frac{b}{3a^2}$$

21. Find the roots of the quadratic equation $(-3x^2 + 9x - 5) = 0$

$$(i) \quad \left(\left(\frac{3}{2} - \frac{1}{6} \sqrt{21} \right), \left(\frac{3}{2} + \frac{1}{6} \sqrt{21} \right) \right)$$

$$(ii) \quad \left(\left(\frac{5}{2} - \frac{1}{6} \sqrt{21} \right), \left(\frac{1}{2} + \frac{1}{6} \sqrt{21} \right) \right)$$

$$(iii) \quad \left(\left(\frac{5}{2} - \frac{1}{6} \sqrt{21} \right), \left(\frac{3}{2} + \frac{7}{2} \right) \right)$$

$$(iv) \quad \left(\left(\frac{3}{2} - \frac{1}{6} \sqrt{21} \right), \left(\frac{3}{2} + \frac{7}{2} \right) \right)$$

$$(v) \quad \left(\left(\frac{3}{2} - \frac{1}{6} \sqrt{21} \right), \left(\frac{3}{2} + \frac{1}{6} \sqrt{21} \right) \right)$$

22. If -4 is the root of $(x^2 + kx + 12) = 0$, find k and the other root

$$(i) \quad k = 10, \text{ and the other root} = 0$$

$$(ii) \quad k = 7, \text{ and the other root} = -3$$

$$(iii) \quad k = 8, \text{ and the other root} = -2$$

$$(iv) \quad k = 4, \text{ and the other root} = -6$$

$$(v) \quad k = 6, \text{ and the other root} = -4$$

23. Solve : $-7\sqrt{11}x^2 - 32x - 3\sqrt{11} = 0$

(i) $\frac{\sqrt{11}}{(-7)}, \frac{(-3)}{\sqrt{44}}$ (ii) $\frac{\sqrt{44}}{(-7)}, \frac{(-3)}{\sqrt{11}}$

(iii) $\frac{\sqrt{44}}{(-7)}, \frac{(-3\sqrt{4})}{\sqrt{11}}$ (iv) $\frac{\sqrt{11}}{(-7\sqrt{4})}, \frac{(-3)}{\sqrt{44}}$

(v) $\frac{\sqrt{11}}{(-7)}, \frac{(-3)}{\sqrt{11}}$

24. Solve : $14x^2 - 9\sqrt{5}x + 5 = 0$

(i) $\frac{\sqrt{5}}{7}, \frac{\sqrt{5}}{2}$ (ii) $\frac{\sqrt{5}}{7}, \frac{\sqrt{5}}{2\sqrt{4}}$

(iii) $\frac{\sqrt{20}}{7}, \frac{\sqrt{5}}{2}$ (iv) $\frac{\sqrt{20}}{7}, \frac{\sqrt{20}}{2}$

(v) $\frac{\sqrt{5}}{7\sqrt{4}}, \frac{\sqrt{5}}{2\sqrt{4}}$

25. Solve : $10x^2 - 6\sqrt{10}x + 8 = 0$

(i) $\frac{4\sqrt{4}}{\sqrt{10}}, \frac{2\sqrt{4}}{\sqrt{10}}$ (ii) $\frac{4}{\sqrt{40}}, \frac{2}{\sqrt{40}}$

$$\sqrt{10} \quad \sqrt{10}$$

$$(iii) \frac{4}{\sqrt{10}}, \frac{2}{\sqrt{40}} \quad (iv) \frac{4\sqrt{4}}{\sqrt{10}}, \frac{2}{\sqrt{10}}$$

$$(v) \frac{4}{\sqrt{10}}, \frac{2}{\sqrt{10}}$$

26. Solve : $x^2 + 10x + 13 = 0$

$$(i) (-5 + \sqrt{36}), (-5 - \sqrt{36}) \quad (ii) (-5 + \sqrt{12}), (-5 - \sqrt{12})$$

$$(iii) (-5\sqrt{4} + \sqrt{12}), (-5\sqrt{4} - \sqrt{12}) \quad (iv) (-5 + \sqrt{24}), (-5 - \sqrt{24})$$

$$(v) (-5\sqrt{5} + \sqrt{12}), (-5\sqrt{5} - \sqrt{12})$$

27. Find the roots of the quadratic equation correct to two decimal places $(-24x^2 + 34x + 10) = 0$

$$(i) 0.75, 2.67 \quad (ii) -0.25, 1.67 \quad (iii) 6.75, 0.67 \quad (iv) 1.75, 3.67 \quad (v) 7.75, 9.67$$

Assignment Key

- 1) (i)
- 2) (v)
- 3) (ii)
- 4) (ii)
- 5) (iii)
- 6) (ii)
- 7) (iii)
- 8) (v)
- 9) (v)
- 10) (ii)
- 11) (v)
- 12) (iii)
- 13) (iii)
- 14) (iii)
- 15) (iii)
- 16) (ii)
- 17) (v)
- 18) (ii)
- 19) (iii)
- 20) (iv)
- 21) (i)
- 22) (ii)
- 23) (v)
- 24) (i)
- 25) (v)
- 26) (ii)
- 27) (ii)