

EduSahara™ Learning Center Assignment

Grade : Class X, SSC

Chapter : Quadratic Equations

Name : Solution of a Quadratic Equation Complex Problems

1. Solve : $\frac{(3x + 5)}{(4x + 18)} = \frac{(3x + 13)}{(5x + 9)}$

(i) (23 , -3) (ii) (-21 , 3) (iii) (21 , -5) (iv) (21 , -4) (v) (21 , -3)

2. Solve : $\frac{(2x + 19)}{(3x + 9)} + \frac{(x + 9)}{(2x + 18)} = \frac{4}{3}$

(i) (-8 , 23) (ii) (-6 , 23) (iii) (-9 , 20) (iv) (-9 , 23) (v) (-9 , 22)

3. Solve : $(x^2 - 4x)^2 - 7(x^2 - 4x) + 12 = 0$

(i) (2 + 4) , (2 - 4) , (2 + 7) , (2 - 7)

(ii) (0 + 2 $\sqrt{2}$) , (0 - 2 $\sqrt{2}$) , (-1 + $\sqrt{7}$) , (0 - $\sqrt{7}$)

(iii) (2 + 2 $\sqrt{2}$) , (2 - 2 $\sqrt{2}$) , (2 + $\sqrt{7}$) , (2 - $\sqrt{7}$)

(iv) (2 + 2 $\sqrt[4]{2}$) , (2 - 2 $\sqrt[4]{2}$) , (2 + $\sqrt[4]{7}$) , (2 - $\sqrt[4]{7}$)

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

4. Solve : $(x^4 - 12x^2 + 27) = 0$

(i) 2 , (-4) , 3 , (-3)

(ii) 4 , (-2) , $\sqrt[4]{3}$, (- $\sqrt[4]{3}$)

(iii) 6 , 0 , $\sqrt{6}$, (- $\sqrt{6}$)

(iv) 3 , (-3) , $\sqrt{3}$, (- $\sqrt{3}$)

(v) 0 , (-6) , $\frac{1}{2}$, (- $\frac{1}{2}$)

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

5. Solve : $(x + 7)(x + 8)(x + 9)(x + 10) = 5040$

(i) $(-3), (-19)$

(ii) $1, (-16)$

(iii) $(-1), (-18)$

(iv) $2, (-14)$

(v) $0, (-17)$

6. Solve the quadratic equation $x + \frac{5}{x} = 6$

(i) $(8, 0)$ (ii) $(8, -2)$ (iii) $(6, 1)$ (iv) $(6, 0)$ (v) $(5, 1)$

For what values of k are the roots of

7. $(k-28)x^2 + (k+53)x + (k-28) = 0$ equal

(i) $(4, 106)$ (ii) $(2, 109)$ (iii) $(4, 108)$

(iv) $(2, 108)$ (v) $(1, 109)$

8. Solve : $\left(\frac{x}{x+5}\right)^2 + 0\left(\frac{x}{x+5}\right) - 49 = 0$

(i) $(\frac{-35}{6}), (\frac{-35}{8})$ (ii) $(\frac{-25}{4}), (\frac{-9}{2})$ (iii) $(\frac{-45}{8}), (\frac{-43}{10})$ (iv) $(\frac{-37}{6}), (\frac{-37}{8})$ (v) $(\frac{-11}{2}), (\frac{-33}{8})$

9. Solve : $\sqrt{4x+2} = (x-4)$

(i) $(6\sqrt{4} + \sqrt{22}), (6\sqrt{4} - \sqrt{22})$ (ii) $(6 + \sqrt{44}), (6 - \sqrt{44})$

(iii) $(6 + \sqrt{66}), (6 - \sqrt{66})$ (iv) $(6 + \sqrt{22}), (6 - \sqrt{22})$

(v) $(6\sqrt{5} + \sqrt{22}), (6\sqrt{5} - \sqrt{22})$

10. Solve : $\sqrt{3x^2+16x+5} = (x+7)$

(i) $(-\frac{1}{2}, -\frac{1}{2})$, $(-\frac{1}{2}, \frac{1}{2})$ (ii) $(-\frac{1}{2}, -\frac{1}{2})$, $(-\frac{1}{2}, \frac{1}{2})$

$$\frac{1}{\sqrt{4}} + \frac{1}{\sqrt{36}}$$

$$\frac{1}{\sqrt{4}} - \frac{1}{\sqrt{36}}$$

$$\frac{1}{\sqrt{36}} + \frac{1}{\sqrt{36}}$$

$$\frac{1}{\sqrt{36}} - \frac{1}{\sqrt{36}}$$

$$(iii) \left(-\frac{1}{2} - \frac{1}{2} \sqrt{178} \right), \left(-\frac{1}{2} + \frac{1}{2} \sqrt{178} \right)$$

$$(iv) \left(-\frac{1}{2} \sqrt{5} - \frac{1}{2} \sqrt{89} \right), \left(-\frac{1}{2} \sqrt{5} + \frac{1}{2} \sqrt{89} \right)$$

$$(v) \left(-\frac{1}{2} - \frac{1}{2} \sqrt{267} \right), \left(-\frac{1}{2} + \frac{1}{2} \sqrt{267} \right)$$

$$11. \text{ Solve : } -\frac{3}{(x+4)} + \frac{1}{(x-1)} = 5$$

$$(i) (-4\sqrt{4}), \sqrt{4} \quad (ii) (-4\sqrt{5}), \sqrt{5}$$

$$(iii) (-4), 1 \quad (iv) (-4\sqrt{3}), \sqrt{3}$$

$$(v) (-4\sqrt{2}), \sqrt{2}$$

$$12. \text{ Solve : } -\frac{1}{(x-4)} - \frac{4}{(-x-1)} = \frac{4}{(x-4)}$$

$$(i) 4\sqrt{4}, (-21\sqrt{4}) \quad (ii) 4, (-21)$$

$$(iii) 4\sqrt{3}, (-21\sqrt{3}) \quad (iv) 4\sqrt{5}, (-21\sqrt{5})$$

$$(v) 4\sqrt{2}, (-21\sqrt{2})$$

$$13. \text{ Solve : } -5\sqrt{11}x^2 + 34x + 9\sqrt{11} = 0$$

$$(i) \frac{\sqrt{11}}{(-5\sqrt{4})}, \frac{9}{\sqrt{44}} \quad (ii) \frac{\sqrt{11}}{(-5)}, \frac{9}{\sqrt{44}}$$

$$(iii) \frac{\sqrt{11}}{(-5)}, \frac{9}{\sqrt{11}} \quad (iv) \frac{\sqrt{44}}{(-5)}, \frac{9}{\sqrt{11}}$$

$$(v) \frac{\sqrt{44}}{(-5)}, \frac{9\sqrt{4}}{\sqrt{11}}$$

Assignment Key

- 1) (v)
- 2) (iv)
- 3) (iii)
- 4) (iv)
- 5) (v)
- 6) (v)
- 7) (v)
- 8) (i)
- 9) (iv)
- 10) (ii)
- 11) (iii)
- 12) (ii)
- 13) (iii)