EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Quadratic Equations

Grade : SSC Grade X

1. Solve : $16x^2 + 8\sqrt{6}x + 6 = 0$

(i) $\frac{\sqrt{24}}{(-4)}, \frac{\sqrt{6}}{(-4)}$ (ii) $\frac{\sqrt{24}}{(-4)}, \frac{\sqrt{24}}{(-4)}$ (iii) $\frac{\sqrt{6}}{(-4\sqrt{4})}, \frac{\sqrt{6}}{(-4\sqrt{4})}$ (iv) $\frac{\sqrt{6}}{(-4)}, \frac{\sqrt{6}}{(-4)}$ (v) $\frac{\sqrt{6}}{(-4)}, \frac{\sqrt{6}}{(-4\sqrt{4})}$

2. Solve : $40x^2b^2 + 21xb + 2 = 0$

(i) $-\frac{1}{8b}, -\frac{2}{5b}$ (ii) $-\frac{1}{10b}, -\frac{2}{7b}$ (iii) $-\frac{1}{6b}, -\frac{2}{3b}$ (iv) $-\frac{3}{8b}, -\frac{4}{5b}$ (v) $\frac{1}{8b}, 0$

3. Solve : $28x^2 + 31abx + 6a^2b^2 = 0$

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

4. Solve : $40x^2 + 41ax + 10a^2 = 0$

(i) $-\frac{5a}{8}, -\frac{2a}{5}$ (ii) $-\frac{5a}{6}, -\frac{2a}{3}$ (iii) $-\frac{7a}{8}, -\frac{4a}{5}$ (iv) $-\frac{3a}{8}, 0$ (v) $-\frac{a}{2}, -\frac{2a}{7}$

5. A number is of two digits. The digit in unit's place is the square of the digit in ten's place. The number formed by reversing the digits exceeds twice the number by 15 . Find the number

(i) 37 (ii) 41 (iii) 38 (iv) 40 (v) 39

6. Find the roots of the quadratic equation $(21x^2 - 26x + 8) = 0$

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

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

(i) $((\frac{7}{4} - \frac{1}{4}\sqrt{65}), (\frac{3}{4} + \frac{1}{4}\sqrt{65}))$ (ii) $((\frac{5}{4} - \frac{1}{4}\sqrt{65}), (\frac{5}{4} + \frac{1}{4}\sqrt{65}))$ (iii) $((\frac{5}{4} - \frac{1}{4}\sqrt{65}), (\frac{5}{4} + \frac{1}{4}\sqrt{65}))$

(iv) $((\frac{5}{4} - \frac{1}{4}\sqrt{65}), (\frac{5}{4} + \frac{65}{4}))$ (v) $((\frac{7}{4} - \frac{1}{4}\sqrt{65}), (\frac{5}{4} + \frac{65}{4}))$

8. Solve : $14x^2a^4 - 19bxa^2 + 6b^2 = 0$

(i) $\frac{4b}{7a^2}, 0$ (ii) $\frac{6b}{5a^2}, \frac{b}{a^2}$ (iii) $\frac{8b}{7a^2}, \frac{b}{a^2}$ (iv) $\frac{2b}{3a^2}, \frac{b}{3a^2}$ (v) $\frac{6b}{7a^2}, \frac{2b}{4a^2}$

9. The perimeter of a rectangular room is 44.00 m and the length of its diagonal is 17.09 m . Find the dimensions of the room

(i) 14.00 m , 8.00 m (ii) 17.00 m , 5.00 m (iii) 18.00 m , 4.00 m (iv) 15.00 m , 7.00 m (v) 16.00 m , 6.00 m

10. The area of a rectangular room is 612.00 sq.m. If the length and breadth are increased by 2 m, the area would become 930.00 sq.m. Find the original dimensions of the room

(i) 5.00 m , 122.40 m (ii) 153.00 m , 4.00 m (iii) 3.00 m , 204.00 m (iv) 6.00 m , 102.00 m

(v) 2.00 m , 306.00 m

11. Solve : $20x^2b^2 + 11a^2xb - 3a^4 = 0$

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

12. Solve : $8x^2 - 30\sqrt{2}x + 56 = 0$

(i) $\frac{8\sqrt{4}}{\sqrt{8}}, \frac{7\sqrt{4}}{\sqrt{8}}$ (ii) $\frac{8}{\sqrt{32}}, \frac{7}{\sqrt{32}}$ (iii) $\frac{8}{\sqrt{8}}, \frac{7}{\sqrt{32}}$ (iv) $\frac{8\sqrt{4}}{\sqrt{8}}, \frac{7}{\sqrt{8}}$ (v) $\frac{8}{\sqrt{8}}, \frac{7}{\sqrt{8}}$

13. 55 is divided into two parts such that the sum of their reciprocals is $\frac{11}{140}$.

Find the two parts

(i) (34,21) (ii) (35,20) (iii) (33,22) (iv) (37,18) (v) (36,19)

14. Solve : $-4\sqrt{14}x^2 - 2x + 3\sqrt{14} = 0$

(i) $\frac{\sqrt{56}}{(-4)}, \frac{3}{\sqrt{14}}$ (ii) $\frac{\sqrt{14}}{(-4)}, \frac{3}{\sqrt{14}}$ (iii) $\frac{\sqrt{14}}{(-4)}, \frac{3}{\sqrt{56}}$ (iv) $\frac{\sqrt{56}}{(-4)}, \frac{3\sqrt{4}}{\sqrt{14}}$ (v) $\frac{\sqrt{14}}{(-4\sqrt{4})}, \frac{3}{\sqrt{56}}$

15. Find the roots of the quadratic equation $(x^2 - 10x + 16) = 0$

(i) (8,2) (ii) (9,1) (iii) (10,-1) (iv) (9,2) (v) (10,1)

16. Find the discriminant of the quadratic equation $(2x^2 + 10x + 12) = 0$

(i) 5 (ii) 7 (iii) 1 (iv) 3 (v) 4

17. Solve : $63x^2 + 2bx - 48b^2 = 0$

(i) $\frac{6b}{5}, -\frac{8b}{7}$ (ii) $\frac{2b}{3}, -\frac{8b}{11}$ (iii) $\frac{6b}{7}, -\frac{8b}{9}$ (iv) $\frac{4b}{7}, -\frac{10b}{9}$ (v) $\frac{8b}{7}, -\frac{2b}{3}$

18. A two digit number is such that the product of the digits is 72. When 9 is added to the number, the digits are reversed. Find the number

(i) 90 (ii) 88 (iii) 89 (iv) 91 (v) 87

19. For what values of k are the roots of $(k+54)x^2 + (k+6)x + (k-9) = 0$ equal

(i) $((-63), 8)$ (ii) $((-66), 10)$ (iii) $((-65), 9)$ (iv) $((-65), 10)$ (v) $((-63), 9)$

20. The sum of the squares of two consecutive odd numbers is 34. Find the numbers

(i) $0, 2$ or $0, (-2)$ (ii) $2, 4$ or $(-2), (-4)$ (iii) 3 , 5 or (-3) , (-5) (iv) $4, 6$ or $(-4), (-6)$ (v) $5, 7$ or $(-5), (-7)$

21. Solve : $x^2 + 14x + 39 = 0$

(i) $(-7+\sqrt{10}), (-7-\sqrt{10})$ (ii) $(-7\sqrt{4}+\sqrt{10}), (-7\sqrt{4}-\sqrt{10})$ (iii) $(-7+\sqrt{30}), (-7-\sqrt{30})$

(iv) $(-7\sqrt{5}+\sqrt{10}), (-7\sqrt{5}-\sqrt{10})$ (v) $(-7+\sqrt{20}), (-7-\sqrt{20})$

22. Find the number which exceeds its reciprocal by $1\frac{1}{2}$

(i) 3 (ii) 1 (iii) 2 (iv) -1 (v) 5

23. Solve : $(x-5)(x-4)(x-3)(x-2) = 120$

(i) $8, 1$ (ii) $7, 0$ (iii) $6, (-1)$ (iv) $10, 2$ (v) $5, (-3)$

24. Solve : $-\frac{3}{(-x+3)} + \frac{5}{(-x-2)} = -3$

(i) $3, (-2)$ (ii) $3\sqrt{5}, (-2\sqrt{5})$ (iii) $3\sqrt{2}, (-2\sqrt{2})$ (iv) $3\sqrt{4}, (-2\sqrt{4})$ (v) $3\sqrt{3}, (-2\sqrt{3})$

25. Solve : $\frac{(2x+7)}{(5x+12)} = \frac{(x+2)}{(2x+9)}$

(i) (3,-13) (ii) (-6,11) (iii) (-3,13) (iv) (-1,15) (v) (-4,12)

Assignment Key

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