EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Quadratic Equations

Grade : ICSE Grade X

1. If -8 is the root of $(x^2+kx+32)=0$, find k and the other root

   (i) $k=10$, and the other root = -6 (ii) $k=11$, and the other root = -5 (iii) $k=13$, and the other root = -3

   (iv) $k=12$, and the other root = -4 (v) $k=14$, and the other root = -2

2. Solve : $(x+1)(x+2)(x+3)(x+4)=360$

   (i) $2,(-7)$ (ii) $1,(-8)$ (iii) $4,(-4)$ (iv) $(-1),(-9)$ (v) $3,(-6)$

3. Find the quadratic equation with roots $(-2,6)$

   (i) $(x^2-3x-18)=0$ (ii) $(x^2-4x-12)=0$ (iii) $(x^2-6x-16)=0$ (iv) $(x^2-2x-24)=0$

   (v) $(x^2-5x-14)=0$

4. Solve : $\left(\frac{x}{(x-5)}\right)^2-7\left(\frac{x}{(x-5)}\right)+10=0$

   (i) $\frac{37}{6},11$ (ii) $\frac{25}{4},10$ (iii) $\frac{27}{4},12$ (iv) $\frac{23}{4},7$ (v) $\frac{13}{2},9$

5. Solve : $\frac{(x-6)}{(x-10)}+\frac{(x-11)}{(x-8)}=\frac{41}{15}$

   (i) $(\frac{58}{9},12)$ (ii) $(\frac{82}{13},14)$ (iii) $(\frac{68}{11},11)$ (iv) $(\frac{70}{11},13)$ (v) $(\frac{72}{11},16)$

6. Solve : $12x^2a+10x+6xa+5=0$

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

7. Solve : $11x^2-8\sqrt{11}x+7=0$

   (i) $\frac{\sqrt{4}}{\sqrt{11}},\frac{7\sqrt{4}}{\sqrt{11}}$ (ii) $\frac{1}{\sqrt{11}},\frac{7}{\sqrt{44}}$ (iii) $\frac{1}{\sqrt{44}},\frac{7}{\sqrt{44}}$ (iv) $\frac{\sqrt{4}}{\sqrt{11}},\frac{7}{\sqrt{11}}$ (v) $\frac{1}{\sqrt{11}},\frac{7}{\sqrt{11}}$

8. Solve : $16x^2 - 8ab^2x - 3a^2b^4 = 0$

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

9. Find the roots of the quadratic equation $(54x^2+3x-15)=0$

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

10. Solve : $(x^2-3x)^2 - 18(x^2-3x) + 81=0$

(i) $(\frac{3}{2}+\frac{15}{2}),(\frac{3}{2}-\frac{15}{2}),(\frac{3}{2}+\frac{15}{2}),(\frac{3}{2}-\frac{15}{2})$ (ii) $(\frac{1}{2}+\frac{3}{2}\sqrt{5}),(\frac{1}{2}-\frac{3}{2}\sqrt{5}),(\frac{1}{2}+\frac{3}{2}\sqrt{5}),(\frac{1}{2}-\frac{3}{2}\sqrt{5})$

(iii) $(\frac{3}{2}+\frac{3}{2}\sqrt{5}),(\frac{3}{2}-\frac{3}{2}\sqrt{5}),(\frac{3}{2}+\frac{3}{2}\sqrt{5}),(\frac{3}{2}-\frac{3}{2}\sqrt{5})$ (iv) $(\frac{5}{2}+\frac{3}{2}\sqrt{5}),(\frac{5}{2}-\frac{3}{2}\sqrt{5}),(\frac{5}{2}+\frac{3}{2}\sqrt{5}),(\frac{5}{2}-\frac{3}{2}\sqrt{5})$

(v) $(\frac{3}{2}+\frac{3}{2}\frac{4}{\sqrt{5}}),(\frac{3}{2}-\frac{3}{2}\frac{4}{\sqrt{5}}),(\frac{3}{2}+\frac{3}{2}\frac{4}{\sqrt{5}}),(\frac{3}{2}-\frac{3}{2}\frac{4}{\sqrt{5}})$

11. Solve : $16x^2a^4 + 6bxa^2 - b^2=0$

(i) $-\frac{b}{a^2}, \frac{b}{6a^2}$ (ii) $-\frac{b}{a^2}, -\frac{b}{8a^2}$ (iii) $-\frac{b}{3a^2}, \frac{b}{10a^2}$ (iv) $-\frac{b}{2a^2}, \frac{b}{8a^2}$ (v) $0, \frac{3b}{8a^2}$

12. The product of the roots of the quadratic equation $(25x^2-10x+1)=0$ is

(i) $(\frac{-1}{25})$ (ii) $\frac{1}{23}$ (iii) $\frac{1}{27}$ (iv) $\frac{1}{25}$ (v) $\frac{3}{25}$

13. If $ax^2 + bx + c$ is exactly divisible by $(x-2),(x+5)$ and leaves a remainder of -10 when divided by $(x+3)$, find a, b and c

(i) $a=1, b=4, c=-9$ (ii) $a=1, b=2, c=-11$ (iii) $a=1, b=5, c=-7$ (iv) $a=1, b=1, c=-13$

(v) $a=1, b=3, c=-10$

14. Find the discriminant of the quadratic equation $(-6x^2-8x+2)=0$

(i) 112 (ii) 115 (iii) 109 (iv) 113 (v) 111

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

(i) $\sqrt{5}, 3\sqrt{5}$ (ii) $\sqrt{3}, 3\sqrt{3}$ (iii) $\sqrt{4}, 3\sqrt{4}$ (iv) $1, 3$ (v) $\sqrt{2}, 3\sqrt{2}$

16. Solve : $36x^2 + 12\sqrt{5}x + 5 = 0$

(i) $\frac{\sqrt{20}}{(-6)}, \frac{\sqrt{5}}{(-6)}$ (ii) $\frac{\sqrt{5}}{(-6\sqrt{4})}, \frac{\sqrt{5}}{(-6\sqrt{4})}$ (iii) $\frac{\sqrt{20}}{(-6)}, \frac{\sqrt{20}}{(-6)}$ (iv) $\frac{\sqrt{5}}{(-6)}, \frac{\sqrt{5}}{(-6\sqrt{4})}$ (v) $\frac{\sqrt{5}}{(-6)}, \frac{\sqrt{5}}{(-6)}$

17. The product of the roots of the quadratic equation $(x^2+12x+36)=0$ is

(i) 36 (ii) 37 (iii) 33 (iv) 38 (v) 35

18. Find the roots of the quadratic equation $(x^2-13x+42)=0$

(i) (8,5) (ii) (7,6) (iii) (10,5) (iv) (10,4) (v) (8,6)

19. Solve : $14x^2a^2 + 19xa + 6 = 0$

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

20. Find the quadratic equation with roots $(\frac{8}{9}, (\frac{-8}{3}))$

(i) $(9x^2+10x-16)=0$ (ii) $(45x^2+32x-64)=0$ (iii) $(9x^2+18x-16)=0$ (iv) $(21x^2+32x-64)=0$

(v) $(27x^2+48x-64)=0$

21. Solve : $6\sqrt{3}x^2 - 27x + 4\sqrt{3} = 0$

(i) $\frac{\sqrt{3}}{6\sqrt{4}}, \frac{4}{\sqrt{12}}$ (ii) $\frac{\sqrt{3}}{6}, \frac{4}{\sqrt{3}}$ (iii) $\frac{\sqrt{12}}{6}, \frac{4}{\sqrt{3}}$ (iv) $\frac{\sqrt{3}}{6}, \frac{4}{\sqrt{12}}$ (v) $\frac{\sqrt{12}}{6}, \frac{4\sqrt{4}}{\sqrt{3}}$

22. Solve : $15x^2a^2 + 2b^2xa - b^4 = 0$

(i) $\frac{b^2}{3a}, -\frac{3b^2}{7a}$ (ii) $\frac{3b^2}{5a}, -\frac{b^2}{9a}$ (iii) $\frac{b^2}{7a}, -\frac{3b^2}{11a}$ (iv) $-\frac{b^2}{5a}, -\frac{5b^2}{9a}$ (v) $\frac{b^2}{5a}, -\frac{b^2}{3a}$

23. Solve : $28x^2a^4b^2 + 29xa^2b + 6 = 0$

(i) $-\frac{2}{5a^2b}, -\frac{3}{2a^2b}$ (ii) $0, -\frac{1}{4a^2b}$ (iii) $-\frac{2}{7a^2b}, -\frac{3}{4a^2b}$ (iv) $-\frac{2}{9a^2b}, -\frac{1}{2a^2b}$ (v) $-\frac{4}{7a^2b}, -\frac{5}{4a^2b}$

24. The sum of the roots of the quadratic equation $(-54x^2-63x-18)=0$ is

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

25. Solve : $15x^2 + 17abx + 4a^2b^2 = 0$

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

Assignment Key

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