# EduSahara™ Learning Center Assignment

**Grade : Class X, ICSE**
**Chapter : Quadratic Equations**
**Name : Solving some complex Quadratic Equations**

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1. Solve : $\frac{(2x+16)}{(x+2)} = \frac{(3x+4)}{(x+6)}$

(i) ( -2 , 22 ) (ii) ( -4 , 21 ) (iii) ( -4 , 20 ) (iv) ( 4 , -22 ) (v) ( -4 , 22 )

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2. Solve : $\frac{(x+26)}{(2x+19)} + \frac{3x}{(x+5)} = \frac{10}{3}$

(i) ( 40 , -14 ) (ii) ( 40 , -16 ) (iii) ( 41 , -14 ) (iv) ( 40 , -15 ) (v) ( 42 , -14 )

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3. Solve : $(x^2-4x)^2 - 17(x^2-4x) + 72 = 0$

(i) $(2+\sqrt[4]{13})$ , $(2-\sqrt[4]{13})$ , $(2+2\sqrt[4]{3})$ , $(2-2\sqrt[4]{3})$

(ii) $(2+13)$ , $(2-13)$ , $(2+6)$ , $(2-6)$

(iii) $(-1+\sqrt{13})$ , $(-1-\sqrt{13})$ , $(0+2\sqrt{3})$ , $(-1-2\sqrt{3})$

(iv) $(4+\sqrt{13})$ , $(4-\sqrt{13})$ , $(4+2\sqrt{3})$ , $(5-2\sqrt{3})$

(v) $(2+\sqrt{13})$ , $(2-\sqrt{13})$ , $(2+2\sqrt{3})$ , $(2-2\sqrt{3})$

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4. Solve : $(x^4 - 8x^2 + 12) = 0$

(i) $\sqrt{9}$ , $(-\sqrt{9})$ , $\sqrt{5}$ , $(-\sqrt{4})$

(ii) $\sqrt{6}$ , $(-\sqrt{6})$ , $\sqrt{2}$ , $(-\sqrt{2})$

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

(iv) $\sqrt[4]{6}$ , $(-\sqrt[4]{6})$ , $\sqrt[4]{2}$ , $(-\sqrt[4]{2})$

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(v) $6\ ,\ `-6´\ ,\ 2\ ,\ `-2´$

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5. Solve : $(x+7)(x+8)(x+9)(x+10) = 360$

(i) $(-7), (-15)$

(ii) $(-4), (-13)$

(iii) $(-2), (-10)$

(iv) $(-3), (-12)$

(v) $(-5), (-14)$

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6. Solve the quadratic equation $x + \frac{7}{x} = -8$

(i) ( -1 , -7 ) (ii) ( 0 , -7 ) (iii) ( 1 , -10 ) (iv) ( 0 , -8 ) (v) ( 1 , -8 )

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7. For what values of $k$ are the roots of $(k-12)x^2 + (k-5)x + (k+3) = 0$ equal

(i) $(-\frac{21}{5}), 12$ (ii) $(-\frac{13}{3}), 13$ (iii) $(-\frac{11}{3}), 11$

(iv) $(-\frac{21}{5}), 13$ (v) $(-\frac{11}{3}), 12$

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8. If $p$ and $q$ are the roots of $(x^2 + 9x + 20) = 0$ ,

find the equation whose roots are $p + \frac{1}{q}$ and $q + \frac{1}{p}$

(i) $(20x^2 + 197x + 483) = 0$ (ii) $(20x^2 + 189x + 441) = 0$

(iii) $(30x^2 + 281x + 651) = 0$ (iv) $(12x^2 + 115x + 273) = 0$

(v) $(20x^2 + 179x + 399) = 0$

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9. If 9 is the root of $(x^2 + kx + 27) = 0$ , find k and the other root

(i) $k =$ -11 , and the other root = 4

(ii) $k =$ -12 , and the other root = 3

(iii) $k =$ -14 , and the other root = 1

(iv) $k = -13$ , and the other root = $2$

(v) $k = -9$ , and the other root = $6$

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10. Find the quadratic equation whose roots are $( 8 - 16 \sqrt{2} )$ and $( 8 + 16 \sqrt{2} )$

(i) $( x^2 - 19x - 448 ) = 0$ (ii) $( 2x^2 - 16x - 448 ) = 0$

(iii) $( x^2 - 13x - 448 ) = 0$ (iv) $( -16x - 448 ) = 0$

(v) $( x^2 - 16x - 448 ) = 0$

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11. If $ax^2 + bx + c$ is exactly divisible by $( x - 5 )$ , $( x - 9 )$ and leaves a remainder of $60$ when divided by $( x + 1 )$ , find $a$ , $b$ and $c$

(i) $a = 1$ , $b = -16$ , $c = 43$
(ii) $a = 1$ , $b = -14$ , $c = 45$
(iii) $a = 1$ , $b = -13$ , $c = 46$
(iv) $a = 1$ , $b = -11$ , $c = 48$
(v) $a = 1$ , $b = -15$ , $c = 44$

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12. Find $a$ and $b$ in order that $(x^3 - 10x^2) + (ax + b)$ may be exactly divisible by $( x^2 - 4x + 3 )$

(i) $a = 30$ , $b = -16$
(ii) $a = 26$ , $b = -19$
(iii) $a = 28$ , $b = -17$
(iv) $a = 27$ , $b = -18$
(v) $a = 25$ , $b = -21$

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# Assignment Key

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