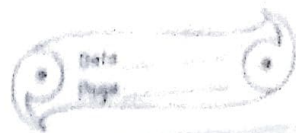


Home Assignment

Quadratic equations



Ex-11.2.

Q1) Find the roots of the following quadratic equations by factorisation.

(i) $x^2 - 3x - 10 = 0$

(ii) $2x^2 + x - 6 = 0$

(iii) $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$

(iv) $2x^2 - x + \frac{1}{8} = 0$

(v) $100x^2 - 20x + 1 = 0$

Ans-> Given $x^2 - 3x - 10 = 0$.

$$\Rightarrow x^2 - 5x + 2x - 10 = 0$$

$$\Rightarrow x(x-5) + 2(x-5) = 0$$

$$\Rightarrow (x-5)(x+2) = 0$$

[Either $x-5=0$ or $x+2=0$.

$$\Rightarrow x=5 \text{ or } x=-2$$

Hence, the roots are 5 & -2.

(ii) Given $2x^2 + x - 6 = 0$.

$$\Rightarrow 2x^2 + 4x - 3x - 6 = 0$$

$$\Rightarrow 2x(x+2) - 3(x+2) = 0$$

$$\Rightarrow (x+2)(2x-3) = 0$$

[Either $x+2=0$ or $2x-3=0$.

$$\Rightarrow x = -2 \text{ or } x = \frac{3}{2}$$

$$v) \text{ Given } 100x^2 - 20x + 1 = 0.$$

$$\Rightarrow 100x^2 - 10x - 10x + 1 = 0.$$

$$\Rightarrow 10x(10x-1) - 1(10x-1) = 0.$$

$$\Rightarrow (10x-1)(10x-1) = 0.$$

$$\text{Either } 10x-1-1=0 \text{ or } 10x-1=0.$$

$$\Rightarrow x = \frac{1}{10} \text{ or } x = \frac{1}{10}.$$

Hence, the roots are $\frac{1}{10}$ & $\frac{1}{10}$.