

Kavya
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Ex-4.2

$$\begin{aligned} 1. (i) & x^2 - 3x - 10 = 0 \\ & \Rightarrow x^2 + 2x - 5x - 10 = 0 \\ & \Rightarrow x(x+2) - 5(x+2) = 0 \\ & \Rightarrow (x+2)(x-5) = 0 \\ & x = 5 \quad \& \quad x = -2 \end{aligned}$$

$$\begin{aligned} (ii) & 2x^2 + x - 6 = 0 \\ & \Rightarrow 2x^2 + 4x - 3x - 6 = 0 \\ & \Rightarrow 2x(x+2) - 3(x+2) = 0 \\ & \Rightarrow (2x-3)(x+2) = 0 \\ & x = \frac{3}{2} \quad \& \quad x = -2 \end{aligned}$$

$$\begin{aligned} (iii) & \sqrt{2}x^2 + 7x + 5\sqrt{2} = 0 \\ & \Rightarrow \sqrt{2}x^2 + 2x + 5x + 5\sqrt{2} = 0 \\ & \Rightarrow \sqrt{2}x(x+\sqrt{2}) + 5(x+\sqrt{2}) = 0 \\ & \Rightarrow (\sqrt{2}x+5)(x+\sqrt{2}) = 0 \\ & x = \frac{-5}{\sqrt{2}} \quad \& \quad x = -\sqrt{2} \end{aligned}$$

$$\begin{aligned} (iv) & 2x^2 - 2x + 1 = 0 \\ & \Rightarrow 16x^2 - 8x + 1 = 0 \\ & \Rightarrow 16x^2 - 4x - 4x + 1 = 0 \\ & \Rightarrow 4x(4x-1) - 1(4x-1) = 0 \\ & \Rightarrow (4x-1)(4x-1) = 0 \\ & x = \frac{1}{4} \quad \& \quad x = \frac{1}{4} \end{aligned}$$

$$\begin{aligned} (v) & 100x^2 - 20x + 1 = 0 \\ & \Rightarrow 100x^2 - 10x - 10x + 1 = 0 \\ & \Rightarrow 10(10x-1) - 1(10x-1) = 0 \\ & \Rightarrow (10x-1)(10x-1) = 0 \\ & x = \frac{1}{10} \quad \& \quad x = \frac{1}{10} \end{aligned}$$