Ex - 4.2

Key
12.5.21

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

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

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

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

$x = 5$ & $x = -2$

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

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

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

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

$x = \frac{3}{2}$, $x = -2$

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

$\Rightarrow \sqrt{2}x^2 + 2x + 5x + 5\sqrt{2} = 0$

$\Rightarrow \sqrt{2}x(x+\sqrt{2}) + 5(x+\sqrt{2}) = 0$

$\Rightarrow (\sqrt{2}x + 5)(x+\sqrt{2}) = 0$

$x = \frac{-5}{\sqrt{2}}$, $x = -\sqrt{2}$

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

$\Rightarrow 16x^2 - 8x + 1 = 0$

$\Rightarrow 16x^2 - 4x - 4x + 1 = 0$

$\Rightarrow 4x(4x-1) - 1(4x-1) = 0$

$\Rightarrow (4x-1)(4x-1)$

$x = \frac{1}{4}$ & $x = \frac{1}{4}$

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

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

$\Rightarrow 10(10x-1) - 1(10x-1)$

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

$x = \frac{1}{10}$ & $x = \frac{1}{10}$