

Ex 4.2

NCERT Solutions by Dev Anoop (Bathinda)

1(i) $x^2 - 3x - 10 = 0$
 $\Rightarrow x^2 - 5x + 2x - 10 = 0$
 $\Rightarrow x(x-5) + 2(x-5) = 0$
 $\Rightarrow (x-5)(x+2) = 0$
 $\Rightarrow x-5=0, x+2=0$
 $\Rightarrow x=5, x=-2$
 \therefore roots are $-2, 5$

1(iv) $2x^2 - x + \frac{1}{8} = 0$
 $(\times 8) 16x^2 - 8x + 1 = 0$
 $\Rightarrow 16x^2 - 4x - 4x + 1 = 0$
 $\Rightarrow 4x(4x-1) - 1(4x-1) = 0$
 $\Rightarrow (4x-1)(4x-1) = 0$
 $\Rightarrow 4x-1=0, 4x-1=0$
 $\Rightarrow x = \frac{1}{4}, x = \frac{1}{4}$
 \therefore roots are $\frac{1}{4}, \frac{1}{4}$

1(ii) $2x^2 + x - 6 = 0$
 $\Rightarrow 2x^2 + 4x - 3x - 6 = 0$
 $\Rightarrow 2x(x+2) - 3(x+2) = 0$
 $\Rightarrow (x+2)(2x-3) = 0$
 $\Rightarrow x+2=0, 2x-3=0$
 $\Rightarrow x = -2, x = \frac{3}{2}$
 \therefore roots are $-2, \frac{3}{2}$

1(v) $100x^2 - 20x + 1 = 0$
 $\Rightarrow 100x^2 - 10x - 10x + 1 = 0$
 $\Rightarrow 10x(10x-1) - 1(10x-1) = 0$
 $\Rightarrow (10x-1)(10x-1) = 0$
 $\Rightarrow 10x-1=0, 10x-1=0$
 $\Rightarrow x = \frac{1}{10}, x = \frac{1}{10}$
 \therefore roots are $\frac{1}{10}, \frac{1}{10}$

1(iii) $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$
 $\Rightarrow \sqrt{2}x^2 + 5x + 2x + 5\sqrt{2} = 0$
 $\Rightarrow x(\sqrt{2}x+5) + \sqrt{2}(\sqrt{2}x+5) = 0$
 $\Rightarrow (\sqrt{2}x+5)(x+\sqrt{2}) = 0$
 $\Rightarrow \sqrt{2}x+5=0, x+\sqrt{2}=0$
 $\Rightarrow x = -\frac{5}{\sqrt{2}}, x = -\sqrt{2}$
 \therefore roots are $-\frac{5}{\sqrt{2}}, -\sqrt{2}$

2(i) $x^2 - 45x + 324 = 0$
 $\Rightarrow x^2 - 36x - 9x + 324 = 0$
 $\Rightarrow x(x-36) - 9(x-36) = 0$
 $\Rightarrow (x-36)(x-9) = 0$
 $\Rightarrow x = 36, x = 9$
 if $x = 36$
 no. Marbles John = 36
 no. Marbles with Juwanti = 9
 if $x = 9$
 Marbles with John = 9
 Marbles with Juwanti = 36