

Ex 4.4**NCERT Solutions by Dev Anoop (Bathinda)**

2 ① $2x^2 + kx + 3 = 0$
For equal roots

$$D = 0$$

$$b^2 - 4ac = 0$$

$$k^2 - 4 \times 2 \times 3 = 0$$

$$\Rightarrow k^2 = 24$$

$$\Rightarrow k = \pm \sqrt{24}$$

$$= \pm 2\sqrt{6}$$

② $kx(x-2) + 6 = 0$

$$\Rightarrow kx^2 - 2kx + 6 = 0$$

For equal roots

$$D = 0$$

$$b^2 - 4ac = 0$$

$$(2k)^2 - 4 \times k \times 6 = 0$$

$$\Rightarrow 4k^2 - 24k = 0$$

$$\Rightarrow 4k(k-6) = 0$$

$$\Rightarrow 4k = 0, k-6 = 0$$

$$\Rightarrow k = 0, k = 6$$

$k = 0$ rejected as
we get $6 = 0$

$$\therefore k = 6$$

3 let breadth = x m
length = $2x$ m

area of rect. groove = 800

$$lb = 800$$

$$x \times 2x = 800$$

$$\Rightarrow 2x^2 - 800 = 0$$

$$\Rightarrow x^2 - 400 = 0$$

comparing

$$a = 1, b = 0, c = -400$$

$$D = b^2 - 4ac$$

$$= 0^2 - 4 \times 1 \times -400$$

$$= 1600$$

$$\therefore D > 0$$

\therefore possible

$$x = \frac{-b \pm \sqrt{D}}{2a}, \frac{-b - \sqrt{D}}{2a}$$

$$= \frac{0 + \sqrt{1600}}{2 \times 1}, \frac{0 - \sqrt{1600}}{2 \times 1}$$

$$= \frac{40}{2}, -\frac{40}{2}$$

$$= 20, -20$$

rejected

$$\therefore \text{breadth} = 20 \text{ m}$$

$$\text{length} = 2 \times 20$$

$$= 40 \text{ m}$$

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