Ex 4.3

1(iii) $4x^2 + 4\sqrt{3}x + 3 = 0$

$\Rightarrow (2x)^2 + 2 \times 2x \times \sqrt{3} + (\sqrt{3})^2 - (\sqrt{3})^2 + 3 = 0$

$\Rightarrow (2x + \sqrt{3})^2 - 3 + 3 = 0$

$\Rightarrow (2x + \sqrt{3})^2 = 0$

$\Rightarrow 2x + \sqrt{3} = 0, \quad 2x + \sqrt{3} = 0$

$\Rightarrow 2x = -\sqrt{3}, \quad 2x = -\sqrt{3}$

$\Rightarrow x = -\frac{\sqrt{3}}{2}, \quad x = -\frac{\sqrt{3}}{2}$

$\therefore$ roots are $-\frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}$

1(iv) $2x^2 + x + 4 = 0$

$(\times 2)$ $4x^2 + 2x + 8 = 0$

$\Rightarrow (2x)^2 + 2 \times 2x \times \frac{1}{2} + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 + 8 = 0$

$\Rightarrow \left(2x + \frac{1}{2}\right)^2 - \frac{1}{4} + 8 = 0$

$\Rightarrow \left(2x + \frac{1}{2}\right)^2 = \frac{1}{4} - 8$

$\Rightarrow \left(2x + \frac{1}{2}\right)^2 = \frac{1 - 32}{4}$

$\Rightarrow \left(2x + \frac{1}{2}\right)^2 = -\frac{31}{4}$

no real roots [$\because$ Square of a no./polynomial cannot be -ve]