Quadratic Equations Ex 14.2 Q1(i)

$x^2 + 10ix - 21 = 0$

$\Rightarrow \quad x^2 + 10ix + 21i^2 = 0 \qquad \left[\because i^2 = -1\right]$

$\Rightarrow \quad x^2 + 7ix + 3ix + 21i^2 = 0$

$\Rightarrow \quad x(x + 7i) + 3i(x + 7i) = 0$

$\Rightarrow \quad (x + 3i)(x + 7i) = 0$

$\therefore \quad x = -3i, -7i$

Quadratic Equations Ex 14.2 Q1(ii)

$x^2 + (1 - 2i)x - 2i = 0$

$\Rightarrow \quad x^2 + x - 2i - 2i = 0$

$\Rightarrow \quad x(x + 1) - 2i(x + 1) = 0$

$\Rightarrow \quad (x - 2i)(x + 1) = 0$

$\Rightarrow \quad x = 2i, -1$

Quadratic Equations Ex 14.2 Q1(iii)

$x^2 - \left(2\sqrt{3} + 3i\right)x + 6\sqrt{3i} = 0$

$\Rightarrow \quad x^2 - 2\sqrt{3}x - 3ix + 6\sqrt{3}i = 0$

$\Rightarrow \quad x\left(x - 2\sqrt{3}\right) - 3i\left(x - 2\sqrt{3}\right) = 0$

$\Rightarrow \quad \left(x - 3i\right)\left(x - 2\sqrt{3}\right) = 0$

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

Quadratic Equations Ex 14.2 Q1(iv)

$6x^2 - 17ix - 12 = 0$

$\Rightarrow \quad 6x^2 - 17ix + 12i^2 = 0 \qquad \left[\because i^2 = -1\right]$

$\Rightarrow \quad 6x^2 - 9ix - 8ix + 12i^2 = 0$

$\Rightarrow \quad 3x(2x - 3i) - 4i(2x - 3i) = 0$

$\Rightarrow \quad (3x - 4i)(2x - 3i) = 0$

$\Rightarrow \quad x = \frac{4}{3}i \quad \text{or} \quad \frac{3}{2}i$

********** END **********