

Quadratic Equations Ex 14.2 Q2(iv)

$$x^2 - (2+i)x - (1-7i) = 0$$

$$\Rightarrow \qquad x^2 - (2+i)x - (1-7i) = 0$$

$$\Rightarrow x^2 - (3-i)x + (1-2i)x - (1-7i) = 0$$

$$\Rightarrow \qquad \times \left( x - \left( 3 - i \right) \right) + \left( 1 - 2i \right) \left( x - \left( 3 - i \right) \right) = 0$$

$$\Rightarrow \left[ x + (1 - 2i) \right] \left[ x - (3 - i) \right] = 0$$

$$\Rightarrow$$
  $x = -1 + 2i$ ,  $3 - i$ 

Quadratic Equations Ex 14.2 Q2(v)

$$ix^2 - 4x - 4i = 0$$

$$\Rightarrow ix^2 + 4i^2x + 4i^3 = 0 \quad \left[ \because i^2 = -1 \right]$$

$$\Rightarrow x^2 + 4ix + 4i^2 = 0$$

$$\Rightarrow$$
  $x^2 + 2ix + 2ix + 4i^2 = 0$ 

$$\Rightarrow \qquad x\left(x+2i\right)+2i\left(x+2i\right)=0$$

$$\Rightarrow$$
  $(x+2i)(x+2i)$ 

$$\therefore \qquad x = -2i, \quad -2i$$

Quadratic Equations Ex 14.2 Q2(vi)

$$x^2 + 4ix - 4 = 0$$

$$\Rightarrow \qquad \chi^2 + 4i\chi + 4i^2 = 0 \qquad \left[\because i^2 = -1\right]$$

$$\Rightarrow x^2 + 2ix + 2ix + 4i^2 = 0$$

$$\Rightarrow \qquad \times (x+2i) + 2i(x+2i) = 0$$

$$\Rightarrow (x+2i)(x+2i) = 0$$

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

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