



Quadratic Equations Ex 14.2 Q2(ix)

We will apply discriminate rule on $ax^2 + bx + c = 0$,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Now,

$$ix^2 - x + 12i = 0$$

$$\begin{aligned} x &= \frac{-(-1) \pm \sqrt{(-1)^2 - 4(i)(12i)}}{2i} \\ &= \frac{1 \pm \sqrt{1 + 48}}{2i} \\ &= \frac{1 \pm \sqrt{49}}{2i} \\ &= \frac{1 \pm 7}{2i} \\ &= \frac{8}{2i}, \frac{-6}{2i} \\ &= \frac{4}{i}, -\frac{3}{i} \\ &= -4i, 3i \end{aligned}$$

Quadratic Equations Ex 14.2 Q2(x)

We will apply discriminate rule on $ax^2 + bx + c = 0$,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Now,

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

$$\begin{aligned} x &= \frac{(3\sqrt{2} - 2i) \pm \sqrt{[-(3\sqrt{2} - 2i)]^2 - 4(1)(-\sqrt{2}i)}}{2(1)} \\ &= \frac{(3\sqrt{2} - 2i) \pm \sqrt{(3\sqrt{2} - 2i)^2 + 4\sqrt{2}i}}{2} \\ &= \frac{3\sqrt{2} - 2i}{2} \pm \frac{4 - \sqrt{2}i}{2} \end{aligned}$$

Quadratic Equations Ex 14.2 Q2(xi)

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

$$x^2 - \sqrt{2}x - ix + \sqrt{2}i = 0$$

$$x(x - \sqrt{2}) - i(x - \sqrt{2}) = 0$$

$$(x - i)(x - \sqrt{2}) = 0$$

$$x = i, \sqrt{2}$$

Quadratic Equations Ex 14.2 Q2(xii)

$$2x^2 - (3 + 7i)x + (9i - 3) = 0$$

$$2x^2 - 3x - 7ix + (9i - 3) = 0$$

$$(2x - 3 - i)(x - 3i) = 0$$

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

$$x = \frac{3+i}{2}, 3i$$

***** END *****