Quadratic Equations Ex 14.1 Q25

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

We will apply discriminant rule,

$$x = \frac{-b \pm \sqrt{D}}{2a} \quad \ldots\ldots\ldots\ldots (A)$$

where $D = b^2 - 4ac$

$= 1^2 - 4.(-1).(-2)$

$= 1 - 8$

$= -7$

from (A)

$$x = \frac{-1 \pm \sqrt{-7}}{2.(-1)}$$

$$= \frac{-1 \pm \sqrt{7}i}{-2}$$

Thus,

$$\therefore \quad x = \frac{-1 \pm \sqrt{7}i}{-2}$$

Quadratic Equations Ex 14.1 Q26

We will apply discriminate rule,

$$x = \frac{-b \pm \sqrt{D}}{2a} \quad \ldots\ldots(A)$$

Where $D = b^2 - 4ac$

$$= (-2)^2 - 4(1)\left(\frac{3}{2}\right)$$

$$= 4 - 6$$

$$= -2$$

From (A)

$$x = \frac{-(-2) \pm \sqrt{-2}}{2(1)}$$

$$= \frac{2 \pm i\sqrt{2}}{2}$$

$$= 1 \pm \frac{i}{\sqrt{2}}$$

Thus,

$$\therefore x = 1 \pm \frac{i}{\sqrt{2}}$$

Quadratic Equations Ex 14.1 Q27

We will apply discriminate rule,

$$x = \frac{-b \pm \sqrt{D}}{2a} \qquad \text{.....(A)}$$

Where $D = b^2 - 4ac$

$$= (-4)^2 - 4(3)\left(\frac{20}{3}\right)$$

$$= 16 - 80$$

$$= -64$$

From (A)

$$x = \frac{-(-4) \pm \sqrt{-64}}{2(3)}$$

$$= \frac{4 \pm i8}{6}$$

$$= \frac{2}{3} \pm \frac{4i}{3}$$

Thus,

$$\therefore x = \frac{2}{3} \pm \frac{4i}{3}$$

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