



Quadratic Equations Ex 8.7 Q9

Answer :

Let first numbers be x and other $(8 - x)$

Then according to question

$$\left\{ \frac{1}{x} + \frac{1}{(8-x)} \right\} \times 15 = 8$$

$$\left\{ \frac{8 - \cancel{x} + \cancel{x}}{x(8-x)} \right\} = \frac{8}{15}$$

$$\left\{ \frac{1}{x(8-x)} \right\} = \frac{\cancel{8}}{15} \times \frac{1}{\cancel{8}}$$

$$x(8-x) = 15$$

$$x^2 - 8x + 15 = 0$$

$$x^2 - 5x - 3x + 15 = 0$$

$$x(x-5) - 3(x-5) = 0$$

$$(x-5)(x-3) = 0$$

$$(x-5) = 0$$

$$x = 5$$

Or

$$(x-3) = 0$$

$$x = 3$$

Thus, two consecutive number be **3,5**

Quadratic Equations Ex 8.7 Q10

Answer :

Let first numbers be x

Then according to question

$$x + \sqrt{x} = \frac{6}{25}$$

Let $x = y^2$ then

$$y^2 + y = \frac{6}{25}$$

$$25y^2 + 25y = 6$$

$$25y^2 + 25y - 6 = 0$$

$$25y^2 + 30y - 5y - 6 = 0$$

$$5y(5y + 6) - 1(5y + 6) = 0$$

$$(5y + 6)(5y - 1) = 0$$

$$(5y + 6) = 0$$

$$y = \frac{-6}{5}$$

Or

$$(5y - 1) = 0$$

$$x = \frac{1}{5}$$

Since, being a positive number, so y cannot be negative.

Therefore,

$$x = y^2$$

$$= \left(\frac{1}{5}\right)^2$$

$$= \left(\frac{1}{25}\right)$$

Thus, the required number be $\boxed{\left(\frac{1}{25}\right)}$

Quadratic Equations Ex 8.7 Q11

Answer :

Let first numbers be x

Then according to question

$$x + x^2 = \frac{63}{4}$$

Let $x = y^2$ then

$$4(x + x^2) = 63$$

$$4x^2 + 4x - 63 = 0$$

$$4x^2 + 18x - 14x - 63 = 0$$

$$2x(2x + 9) - 7(2x + 9) = 0$$

$$(2x + 9)(2x - 7) = 0$$

$$(2x + 9) = 0$$

$$x = -\frac{9}{2}$$

Or

$$(2x - 7) = 0$$

$$x = \frac{7}{2}$$

Thus, the required number be $\boxed{\frac{7}{2}, \frac{-9}{2}}$

Answer :

Let three consecutive integer be x , $(x+1)$ and $(x+2)$

Then according to question

$$x^2 + (x+1)(x+2) = 154$$

$$x^2 + x^2 + 3x + 2 = 154$$

$$2x^2 + 3x + 2 - 154 = 0$$

$$2x^2 + 3x - 152 = 0$$

$$2x^2 + 3x - 152 = 0$$

$$2x^2 - 16x + 19x - 152 = 0$$

$$2x(x-8) + 19(x-8) = 0$$

$$(x-8)(2x+19) = 0$$

$$(x-8) = 0$$

$$x = 8$$

Or

$$(2x+19) = 0$$

$$x = \frac{-19}{2}$$

Since, x being a positive number, so x cannot be negative.

Therefore,

When $x = 8$ then other positive integer

$$x+1 = 8+1$$

$$= 9$$

And

$$x+2 = 8+2$$

$$= 10$$

Thus, three consecutive positive integer be $8, 9, 10$

***** END *****