



Quadratic Equations Ex 8.7 Q32

Answer :

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

Then according to question

$$x^2 + (x+1)(x+2) = 46$$

$$x^2 + x^2 + 3x + 2 = 46$$

$$2x^2 + 3x + 2 - 46 = 0$$

$$2x^2 + 3x - 44 = 0$$

$$2x^2 + 3x - 44 = 0$$

$$2x^2 - 8x + 11x - 44 = 0$$

$$2x(x-4) + 11(x-4) = 0$$

$$(x-4)(2x+11) = 0$$

$$(x-4) = 0$$

$$x = 4$$

Or

$$(2x+11) = 0$$

$$x = \frac{-11}{2}$$

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

Therefore,

When $x = 4$ then other positive integer

$$x+1 = 4+1$$

$$= 5$$

And

$$x+2 = 4+2$$

$$= 6$$

Thus, three consecutive positive integer be 4,5,6

Quadratic Equations Ex 8.7 Q33

Answer :

Let the smaller numbers be x

Then according to question,

The larger number be $= 2x - 5$, then

$$(2x - 5)^2 - x^2 = 88$$

$$4x^2 - 20x + 25 - x^2 - 88 = 0$$

$$3x^2 - 20x - 63 = 0$$

$$3x^2 - 27x + 7x - 63 = 0$$

$$3x^2 - 27x + 7x - 63 = 0$$

$$3x(x - 9) + 7(x - 9) = 0$$

$$(x - 9)(3x + 7) = 0$$

$$(x - 9) = 0$$

$$x = 9$$

Or

$$(3x + 7) = 0$$

$$x = \frac{-7}{3}$$

Since, x being a positive integer so, x cannot be negative,

Therefore,

When $x = 9$ then larger number be

$$2x - 5 = 2 \times 9 - 5$$

$$= 18 - 5$$

$$= 13$$

Thus, two consecutive number be either 9,13

Answer :

Let the larger numbers be x

Then according to question,

Square of the smaller number be $= 8x$ then

$$x^2 - 8x = 180$$

$$x^2 - 8x - 180 = 0$$

$$x^2 - 18x + 10x - 180 = 0$$

$$x(x - 18) + 10(x - 18) = 0$$

$$(x - 18)(x + 10) = 0$$

$$(x - 18) = 0$$

$$x = 18$$

Or

$$(x + 10) = 0$$

$$x = -10$$

Since, x being a positive integer so, x cannot be negative,

Therefore,

When $x = 18$ then smaller number be

$$\sqrt{8x} = \sqrt{8 \times 18}$$

$$= \sqrt{144}$$

$$= \pm 12$$

Thus, two consecutive number be $18, 12$ or $18, -12$

***** END *****