

Quadratic Equations Ex 8.7 Q4

## Answer:

Let first numbers be x and other (48-x)

Then according to question

$$x(48-x) = 432$$
$$48x - x^2 = 432$$

$$x^2 - 48x + 432 = 0$$
$$x^2 - 36x - 12x + 432 = 0$$

$$x(x-36)-12(x-36)=0$$

$$(x-36)(x-12)=0$$

$$(x-36)=0$$

$$x = 36$$

Or

$$(x-12)=0$$

$$x = 12$$

Thus, two number be 36,12

Quadratic Equations Ex 8.7 Q5

# Answer:

Let an integer be x.

Then according to question

$$x + x^{2} = 90$$

$$x^{2} + x - 90 = 0$$

$$x^{2} + 10x - 9x - 90 = 0$$

$$x(x+10) - 9(x+10) = 0$$

$$(x+10)(x-9) = 0$$

$$(x+10) = 0$$

$$x = -10$$
Or
$$(x-9) = 0$$

$$x = 9$$

Thus, an integer be -10,9

Quadratic Equations Ex 8.7 Q6

#### Answer:

Let the whole numbers be x.

Then according to question

$$(x-20) = 69 \times \frac{1}{x}$$
$$x(x-20) = 69$$

$$x^2 - 20x - 69 = 0$$

$$x^2 - 23x + 3x - 69 = 0$$

$$x(x-23)+3(x-23)=0$$

$$(x-23)(x+3)=0$$

$$(x-23)=0$$

$$x = 23$$

Or

$$(x+3)=0$$

$$x = -3$$

Since, whole numbers being a positive, so x cannot be negative.

Thus, whole numbers be 23

Quadratic Equations Ex 8.7 Q7

### Answer:

Let two consecutive numbers be x and (x+1)

Then according to question

$$x(x+1) = 20$$

$$x^2 + x - 20 = 0$$

$$x^2 + 5x - 4x - 20 = 0$$

$$x(x+5)-4(x+5)=0$$

$$(x+5)(x-4)=0$$

$$(x+5)=0$$

$$x = -5$$

Or

$$(x-4)=0$$

$$r = 4$$

Since, x being a natural number,

Therefore negative value is not possible

So when x = 4 then

$$x + 1 = 4 + 1$$

$$= 5$$

Thus, two consecutive numbers are 4,5

## Quadratic Equations Ex 8.7 Q8

#### Answer:

Let two consecutive odd positive integer be (2x-1) and other (2x+1)

Then according to question

$$(2x+1)^2 + (2x-1)^2 = 394$$

$$4x^{2} + 4x + 1 + 4x^{2} = 4x + 1 = 394$$
  
 $8x^{2} + 2 = 394 - 2$ 

$$8x^2 + 2 = 394$$

$$8x^2 = 394 - 2$$

$$x^2 = \frac{392}{8}$$

$$x^2 = 49$$

$$x = \sqrt{49}$$

$$= \pm 7$$

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

Therefore,

When x = 7 then odd positive

$$2x-1 = 2 \times 7 - 1$$

And

$$2x+1 = 2 \times 7 + 1$$

Thus, two consecutive odd positive integer be 13,15

\*\*\*\*\*\*\*\*\* END \*\*\*\*\*\*\*