Linear equations in one variable Ex 8.4 Q1

Answer :

Let the required number be 'x'. Then, 5 subtracted from 3 times x = 3x — 5.

⇒ 3x — 5 = 16

Adding 5 to both sides, we get

⇒ 3x — 5 + 5 = 16 + 5

⇒ 3x= 21

Dividing both sides by 3, we get

$\Rightarrow \frac{3x}{3} = \frac{21}{3}$

⇒ x =7

Thus, the required number is 7.

Linear equations in one variable Ex 8.4 Q2

Answer :

Let the required number be 'x'. Thus, when multiplied by 7, it gives 7x, and x increases by 78.

⇒ 7x = x + 78

Transposing x to LHS, we get

⇒ 7x — x = 78

⇒ 6x = 78

Dividing both sides by 6, we get

$\Rightarrow \frac{6x}{6} = \frac{78}{6}$

⇒ x =13

Thus, the required number is 13.

Linear equations in one variable Ex 8.4 Q3

Answer :

Let the first number be 'x'. Hence, the second number = x + 1 and the third number = x + 2.

⇒ Sum of first and second numbers = (x) + (x + 1).

ATQ:

⇒ (x) + (x + 1) = 15 + (x + 2)

⇒ 2x + 1 = 17 + x

Transposing x to LHS and 1 to RHS, we get

⇒ 2x — x = 17 — 1

⇒ x = 16

So, first number = x = 16

Second number = x + 1 = 16 + 1 = 17

Third number = x + 2 = 16 + 2 = 18

Thus, the required consecutive natural numbers are 16, 17 and 18.

Linear equations in one variable Ex 8.4 Q4

Answer :

Let the smaller number be 'x'. So, the larger number = x + 7.

ATQ:

$\Rightarrow 6x + (x + 7) = 77$

$\Rightarrow 6x + x + 7 = 77$

$\Rightarrow 7x + 7 = 77$

Subtracting 7 from both sides, we get

$\Rightarrow 7x + 7 - 7 = 77 - 7$

$\Rightarrow 7x = 70$

Dividing both sides by 7, we get

$\Rightarrow \frac{7x}{7} = \frac{70}{7}$

$x = 10$

Thus, the smaller number = x = 10, and the larger number = x + 7 = 10 + 7 = 17.

The two required numbers are 10 and 17.

Linear equations in one variable Ex 8.4 Q5

Answer :

Let the number thought of by the man be 'x'.

So, ATQ:

$\Rightarrow \frac{x}{3} + 5 = 2x$

Transposing x/3 to RHS, we get

$\Rightarrow 5 = 2x - \frac{x}{3}$

$\Rightarrow 5 = \frac{6x - x}{3}$

$\Rightarrow 5 = \frac{5x}{3}$

Multiplying both sides by 3, we get

$\Rightarrow 5 \times 3 = \frac{5x}{3} \times 3$

$\Rightarrow 15 = 5x$

Dividing both sides by 5, we get

$\Rightarrow \frac{15}{5} = \frac{5x}{5}$

$\Rightarrow x = 3$

Thus, the number thought of by the man is 3.

Linear equations in one variable Ex 8.4 Q6

Answer :

Let the required number be 'x'.

So, ATQ:

$\Rightarrow 3x + 5 = 50$

Subtracting 5 from both sides, we get

$\Rightarrow 3x + 5 - 5 = 50 - 5$

$\Rightarrow 3x = 45$

Dividing both sides by 3, we get

$\Rightarrow \frac{3x}{3} = \frac{45}{3}$

$\Rightarrow x = 15$

Thus, the required number is 15.

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