

# Mathematics

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(Chapter - 2) (Linear Equations in One Variable)

(Class - VIII)

## Exercise 2.1

### Question 1:

Solve the following:  $x - 2 = 7$

#### Answer 1:

$$x - 2 = 7$$

$$\Rightarrow x - 2 + 2 = 7 + 2$$

$$\Rightarrow x = 9$$

[Adding 2 both sides]

### Question 2:

Solve the following:  $y + 3 = 10$

#### Answer 2:

$$y + 3 = 10$$

$$\Rightarrow y + 3 - 3 = 10 - 3$$

$$\Rightarrow y = 7$$

[Subtracting 3 both sides]

### Question 3:

Solve the following:  $6 = z + 2$

#### Answer 3:

$$6 = z + 2$$

$$\Rightarrow 6 - 2 = z + 2 - 2$$

$$\Rightarrow 4 = z \quad \Rightarrow$$

$$z = 4$$

[Subtracting 2 both sides]

### Question 4:

Solve the following:  $\frac{3}{7} + x = \frac{17}{7}$

#### Answer 4:

$$\frac{3}{7} + x = \frac{17}{7}$$

$$\Rightarrow x + \frac{3}{7} - \frac{3}{7} = \frac{17}{7} - \frac{3}{7}$$

$$\Rightarrow x = \frac{17 - 3}{7}$$

$$\Rightarrow x = \frac{14}{7}$$

$$\Rightarrow x = 2$$

[Subtracting  $\frac{3}{7}$  both sides]

### Question 5:

Solve the following:  $6x = 12$

#### Answer 5:

$$6x = 12$$

$$\Rightarrow \frac{x}{6} = \frac{12}{6}$$

$$\Rightarrow x = 2$$

[Dividing both sides by 6]

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## Question 6:

Solve the following:  $\frac{t}{5} = 10$

### Answer 6:

$$\frac{t}{5} = 10$$

$$\Rightarrow \frac{t}{5} \times 5 = 10 \times 5$$

[Multiplying both sides by 5]

$$\Rightarrow t = 50$$

## Question 7:

Solve the following:  $\frac{2x}{3} = 18$

### Answer 7:

$$\frac{2x}{3} = 18$$

$$\Rightarrow \frac{2x}{3} \times 3 = 18 \times 3$$

[Multiplying both sides by 3]

$$\Rightarrow 2x = 18 \times 3$$

$$\Rightarrow \frac{2x}{2} = \frac{18 \times 3}{2}$$

[Dividing both sides by 2]

$$\Rightarrow x = 27$$

## Question 8:

Solve the following:  $1.6 = \frac{y}{1.5}$

### Answer 8:

$$1.6 = \frac{y}{1.5}$$

$$\Rightarrow 1.6 \times 1.5 = \frac{y}{1.5} \times 1.5$$

[Multiplying both sides by 1.5]

$$\Rightarrow 2.40 = y$$

$$\Rightarrow y = 2.40$$

## Question 9:

Solve the following:  $7x - 9 = 16$

### Answer 9:

$$7x - 9 = 16$$

$$\Rightarrow 7x - 9 + 9 = 16 + 9$$

[Adding 9 both sides]

$$\Rightarrow 7x = 25 \quad \Rightarrow \quad \frac{7x}{7} = \frac{25}{7}$$

[Dividing both sides by 7]

$$\Rightarrow x = \frac{25}{7}$$

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## Question 10:

Solve the following:  $14y - 8 = 13$

### Answer 10:

$$14y - 8 = 13$$

$$\Rightarrow 14y - 8 + 8 = 13 + 8$$

[Adding 8 both sides]

$$\Rightarrow 14y = 21$$

$$\Rightarrow \frac{14y}{14} = \frac{21}{14}$$

[Dividing both sides by 14]

$$\Rightarrow y = \frac{3}{2}$$

## Question 11:

Solve the following:  $17 + 6p = 9$

### Answer 11:

$$17 + 6p = 9$$

$$\Rightarrow 17 + 6p - 17 = 9 - 17$$

[Subtracting 17 from both sides]

$$\Rightarrow 6p = -8$$

$$\Rightarrow \frac{6p}{6} = \frac{-8}{6}$$

[Dividing both sides by 6]

$$\Rightarrow p = \frac{-4}{3}$$

## Question 12:

Solve the following:  $\frac{x}{3} + 1 = \frac{7}{15}$

### Answer 12:

$$\frac{x}{3} + 1 = \frac{7}{15}$$

$$\Rightarrow \frac{x}{3} + 1 - 1 = \frac{7}{15} - 1$$

[Subtracting 1 from both sides]

$$\Rightarrow \frac{x}{3} = \frac{7 - 15}{15}$$

$$\Rightarrow \frac{x}{3} = \frac{-8}{15}$$

$$\Rightarrow \frac{x}{3} \times 3 = \frac{-8}{15} \times 3$$

[Multiplying both sides by 3]

$$\Rightarrow x = \frac{-8}{5}$$

