

How to Solve Equations with Parentheses

- 1 Find the solution to the equation.

$$5(x - 1) + 3 = 3x + 8$$

$$x = \underline{\hspace{2cm}}$$

- 2 Find the solution to the equation.

$$3(x + 2) + 5x = 46$$

$$x = \underline{\hspace{2cm}}$$

3 Find the solution to the equation.

$$5(2x - 1) + 4 = 3(x + 2)$$

$$x = \underline{\hspace{2cm}}$$

4 Find the solution to the equation.

$$7(2x + 3) - 6 = 5(x + 2) + 32$$

$$x = \underline{\hspace{2cm}}$$

5 Find the solution to the equation.

$$1 - 3(8 - x) = -2(15 - 2x)$$

$$x = \underline{\hspace{2cm}}$$

6 Find the solution to the equation.

$$7(3x - 2) - 2(x - 1) = x + 24$$

$$x = \underline{\hspace{2cm}}$$

7

Find the solution to the equation.

$$10(x + 5) - 42 = 5(x - 1) + 28$$

$$x = \underline{\hspace{2cm}}$$

8

Find the solution to the equation.

$$12(x - 2) + 2x = 3(x - 3) + 29$$

$$x = \underline{\hspace{2cm}}$$

- 9 Find the solution to the equation.

$$6(x - 9) + 5(x + 2) - 2 = 2(2x + 1) + 29$$

$$x = \underline{\hspace{2cm}}$$

- 10 Solve word problems using the equation.

The water rate of the apartment that Irene lives is shown below.

Usage of Water	Price/ton
The first 20 tons (inclusive)	\$1/ton
Above 20 tons	\$3/ton (for the excess part)

Irene paid 74 dollars for the water rate. She used at most tons of water.

How to Solve Equations with Parentheses

- 1 Find the solution to the equation.

$$5(x - 1) + 3 = 3x + 8$$

$$x = \underline{\hspace{2cm}}$$

Answer 5

Solution

$$\begin{aligned} 5(x - 1) + 3 &= 3x + 8 \\ 5x - 2 &= 3x + 8 \\ x &= 5 \end{aligned}$$

- 2 Find the solution to the equation.

$$3(x + 2) + 5x = 46$$

$$x = \underline{\hspace{2cm}}$$

Answer 5

Solution

$$\begin{aligned} 3x + 6 + 5x &= 46 \\ 8x &= 40 \\ x &= 5 \end{aligned}$$

- 3 Find the solution to the equation.

$$5(2x - 1) + 4 = 3(x + 2)$$

$$x = \underline{\hspace{2cm}}$$

Answer 1

Solution

$$\begin{aligned} 5(2x - 1) + 4 &= 3(x + 2) \\ 10x - 1 &= 3x + 6 \\ x &= 1 \end{aligned}$$



4 Find the solution to the equation.

$$7(2x + 3) - 6 = 5(x + 2) + 32$$

$$x = \underline{\hspace{2cm}}$$

Answer 3

Solution

$$\begin{aligned} 7(2x + 3) - 6 &= 5(x + 2) + 32 \\ 14x + 15 &= 5x + 42 \\ x &= 3 \end{aligned}$$

5 Find the solution to the equation.

$$1 - 3(8 - x) = -2(15 - 2x)$$

$$x = \underline{\hspace{2cm}}$$

Answer 7

Solution

$$\begin{aligned} 1 - 3(8 - x) &= -2(15 - 2x) \\ 1 - 24 + 3x &= -30 + 4x \\ -x &= -7 \\ x &= 7 \end{aligned}$$

6 Find the solution to the equation.

$$7(3x - 2) - 2(x - 1) = x + 24$$

$$x = \underline{\hspace{2cm}}$$

Answer 2

Solution

$$\begin{aligned} 7(3x - 2) - 2(x - 1) &= x + 24 \\ 21x - 14 - 2x + 2 &= x + 24 \\ 19x - 12 &= x + 24 \\ 18x &= 36 \\ x &= 2 \end{aligned}$$

- 7 Find the solution to the equation.

$$10(x + 5) - 42 = 5(x - 1) + 28$$

$$x = \underline{\hspace{2cm}}$$

Answer 3

Solution

$$\begin{aligned} 10(x + 5) - 42 &= 5(x - 1) + 28 \\ 10x + 8 &= 5x + 23 \\ x &= 3 \end{aligned}$$

- 8 Find the solution to the equation.

$$12(x - 2) + 2x = 3(x - 3) + 29$$

$$x = \underline{\hspace{2cm}}$$

Answer 4

Solution

$$\begin{aligned} 12(x - 2) + 2x &= 3(x - 3) + 29 \\ 14x - 24 &= 3x + 20 \\ x &= 4 \end{aligned}$$

- 9 Find the solution to the equation.

$$6(x - 9) + 5(x + 2) - 2 = 2(2x + 1) + 29$$

$$x = \underline{\hspace{2cm}}$$

Answer 11

Solution

$$\begin{aligned} 6(x - 9) + 5(x + 2) - 2 &= 2(2x + 1) + 29 \\ 11x - 46 &= 4x + 31 \\ x &= 11 \end{aligned}$$

- 10 Solve word problems using the equation.

The water rate of the apartment that Irene lives is shown below.

Usage of Water	Price/ton
The first 20 tons (inclusive)	\$1/ton
Above 20 tons	\$3/ton (for the excess part)

Irene paid 74 dollars for the water rate. She used at most _____ tons of water.

Answer 38

Solution Let the usage of water be x tons.

$$20 \times 1 + 3(x - 20) = 74$$

$$20 + 3x - 60 = 74$$

$$3x = 114$$

$$x = 38$$

So, she used at most 38 tons of water.