

Mathematics 9

Section 6.1 - Solving Equations by Using Inverse Operations III

Thus far we have looked at how to solve one-step and two-step algebra equations. These are the most basic and standard form of algebra equations that we can deal with. Now we will look at how to solve three additional types of equations/problems.

Using the Distributive Property

$$3(5n + 4) = 42$$

WE MUST APPLY THE DISTRIBUTIVE PROPERTY 1ST

$$3(5n + 4) = 42$$

$$15n + 12 = 42$$

NOW SOLVE LIKE A REGULAR ALGEBRA EQUATION

$$\begin{array}{r} 15n + 12 = 42 \\ -12 \quad -12 \end{array}$$

$$\frac{15n}{15} = \frac{30}{15}$$

$$n = 2$$

VERIFY:

$$3(5(2) + 4) = 42$$

$$3(10 + 4) = 42$$

$$3(14) = 42$$

$$42 = 42 \quad \checkmark$$

STOP! Do practice worksheet!!

Solving an Equation Involving Percents

15% OF A NUMBER IS 6.3. WHAT IS THE NUMBER?

CONVERT % TO DECIMAL

$$15\% = 0.15$$

WRITE EQUATION TO MATCH STATEMENT

$$0.15n = 6.3$$

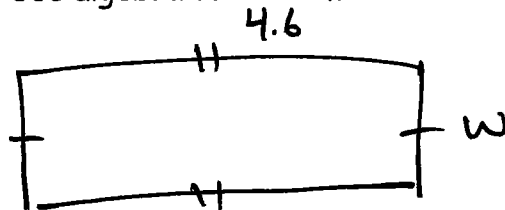
SOLVE

$$\frac{0.15n}{0.15} = \frac{6.3}{0.15}$$

$$n = 42$$

Using Equations to Solve Problems

A rectangle has a length of 4.6 m and a perimeter of 13.4 m.
Use algebra to determine the width.



WRITE AN EQUATION THAT REPRESENTS THE PERIMETER
* REMEMBER FINDING THE PERIMETER, IS ADDING ALL SIDES TOGETHER *

$$2(w + 4.6) = 13.4$$

$$2w + 9.2 = 13.4$$

$$\begin{array}{r} -9.2 \quad -9.2 \\ 2w = 4.2 \\ \hline w = 2.1 \end{array}$$

$$w = 2.1 \text{ m}$$

VERIFY:

$$2(2.1 + 4.6) = 13.4$$

$$2(6.7) = 13.4$$

$$13.4 = 13.4 \checkmark$$