

Lesson 8-3

Example 1 Translate Sentences into Equations

Translate the sentence into an equation.

Six less than two times a number is -16.

$$2n - 6 = -16$$

Example 2 Translate Sentences into Equations

Translate the sentence into an equation.

Twelve is 5 more than three times a number.

$$12 = 3n + 5$$

Example 3 Translate Sentences into Equations

Translate the sentence into an equation.

The product of a number and seven, decreased by 5, is equal to 30.

$$7n - 5 = 30$$

Example 4 Real-World Example

FUND-RAISING The school puppet club needs \$400 for new puppets. With only \$250 in their account, they decide to raise the rest by selling candy bars for a profit of \$0.50 per bar. How many candy bars will they need to sell?

Words	Account balance plus \$0.50 per candy bar equals \$400.
Variable	Let c represent the number of candy bars sold.
Equation	$250 + 0.50c = 400$

$250 + 0.50c = 400$	Write the equation.
$250 - 250 + 0.50c = 400 - 250$	Subtract 250 from each side.
$0.50c = 150$	Simplify.
$\frac{0.50c}{0.50} = \frac{150}{0.50}$	Divide each side by 0.50.
$c = 300$	Simplify.

They need to sell 300 candy bars.

Example 5 Real-World Example

DINING You and your friend's lunch totaled \$16. Your lunch cost \$2 more than your friend's. How much was your friend's lunch?

Words

Your friend's lunch plus your lunch equals \$16.

Variable

Let f represent the cost of your friend's lunch.

Equation

$$f + f + 2 = 16$$

$$f + f + 2 = 16$$

$$2f + 2 = 16$$

$$2f + 2 - 2 = 16 - 2$$

$$2f = 14$$

$$\frac{2f}{2} = \frac{14}{2}$$

$$f = 7$$

Write the equation.

Combine like terms.

Subtract 2 from both sides.

Simplify.

Divide each side by 2.

Simplify.

Your friend spent \$7 on lunch.