

Lesson 5-1

Example 1

Tell whether the equation is true, false, or an open sentence.

a. $4(6 + 9) = 60$

b. $-12 + 4 = 3(2 - 6)$

c. $3x + 8 = 17$

Solution

a. $4(6 + 9) = 60$

$4(15) = 60$

$60 = 60$

The equation is *true*.

b. $-12 + 4 = 3(2 - 6)$

$-8 = 3(-4)$

$-8 \neq -12$

The equation is *false*.

c. $3x + 8 = 17$

The equation contains a variable, so it is an open sentence.

Example 2

Which value, -2 or 5, is a solution of the equation $4x + 11 = 3$?

Solution

$4x + 11 = 3$

$4(-2) + 11 = 3$

$-8 + 11 = 3$

$3 = 3$

So -2 is a solution.

$4x + 11 = 3$

$4(5) + 11 = 3$

$20 + 11 = 3$

$33 \neq 3$

So 5 is not a solution.

Substitute -2 for x .

Use order of operations.

Substitute 5 for x .

Use order of operations.

Example 3

RETAIL Melissa went shopping at a mall near her home and spent a total of \$56, not including sales tax, for a pair of slacks and a matching shirt. The slacks cost \$38. Find the price of the shirt. Use the equation $38 + p = 56$ and these values for p : 16 or 18.

Solution

Let $p = 16$.

$$\begin{aligned}38 + p &= 56 \\38 + 16 &= 56 \\54 &\neq 56\end{aligned}$$

Let $p = 18$.

$$\begin{aligned}38 + p &= 56 \\38 + 18 &= 56 \\56 &= 56\end{aligned}$$

The price of the shirt was \$18.