Introduction to Algebra

LESSON 5

Reading Strategies: Use a Visual Cue

An equation is like a balance scale. The value on the right side of the balance scale or equation is equal to the value on the left side of the balance scale or equation.

A balanced scale also helps you to picture a balanced equation:

$$f + 32 = 61$$

Step 1: To find the value of f, the variable needs to be by itself on one side of the equation. So 32 must be subtracted from the left side of the equation.
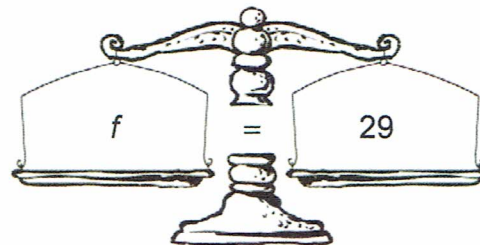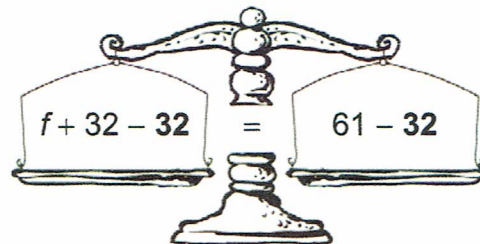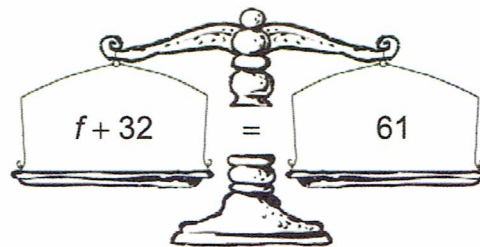
Step 2: To keep the scale balanced, subtract 32 from the right side of the equation as well.

$$f + 32 - \mathbf{32} = 61 - \mathbf{32}$$

Step 3: Check to verify that $f = 29$ is the solution.

$$f + 32 = 61$$

$$29 + 32 \stackrel{?}{=} 61$$

$$f = 29$$

$$61 \stackrel{?}{=} 61 \checkmark \qquad \text{29 is the solution.}$$

To get the variable by itself in an addition equation, subtract the same value from both sides of the equation.

Use $z + 16 = 42$ to answer Exercises 1–4.

1. On which side of the equation is the variable? _____

2. What will you do to get the variable by itself? _____

3. What must you do to the other side of the equation to keep it balanced? _____

4. What is the value of z? _____

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