

# Solving Inequalities

## What You'll Learn

Skim the lesson. Predict two things that you expect to learn based on the headings and the Key Concept box.

1. \_\_\_\_\_  
 \_\_\_\_\_

2. \_\_\_\_\_  
 \_\_\_\_\_

## Active Vocabulary

**Review Vocabulary** Write a word description for each inequality symbol and write a true mathematical sentence using the symbol. (*Prerequisite Skill*)

1.  $>$  \_\_\_\_\_

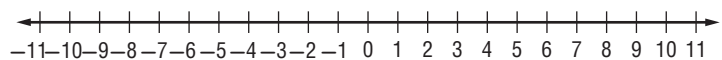
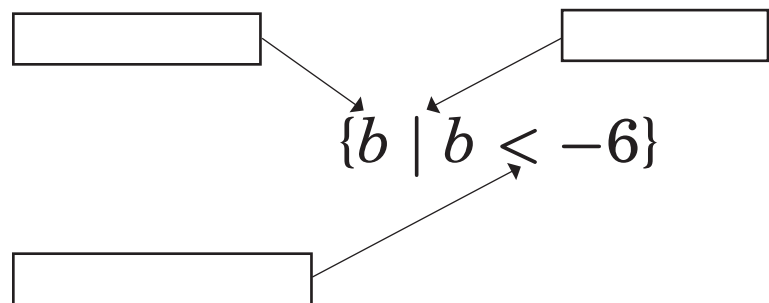
2.  $<$  \_\_\_\_\_

3.  $\geq$  \_\_\_\_\_

4.  $\leq$  \_\_\_\_\_

**New Vocabulary** Label the parts of the *set builder notation* below using the phrases given at the left. Show the set on the number line.

*such that*  
*all numbers b*  
*b is less than -6*



(continued)

**Main Idea**

**Details**

**One-Step Inequalities**

**Identify the reason for each step in solving the inequality. Graph the solution set on a number line.**

$6x + 12 < 8x - 8$  \_\_\_\_\_

$6x + 12 - 12 < 8x - 8 - 12$  \_\_\_\_\_

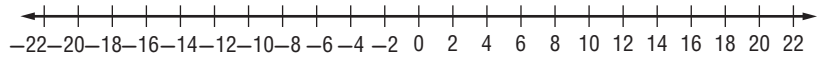
$6x < 8x - 20$  \_\_\_\_\_

$6x - 8x < 8x - 8x - 20$  \_\_\_\_\_

$-2x < -20$  \_\_\_\_\_

$\frac{-2x}{-2} < \frac{-20}{-2}$  \_\_\_\_\_

$x > 10$  \_\_\_\_\_



**Multi-Step Inequalities**

**Describe the similarities and differences between solving an equation and solving an inequality.**

Similarities	Differences

**Helping You Remember**

A common error in solving inequalities is forgetting to reverse the equality symbol when multiplying or dividing both sides of an inequality by a negative number. How could you explain this rule to a classmate who is having trouble remembering this rule?

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