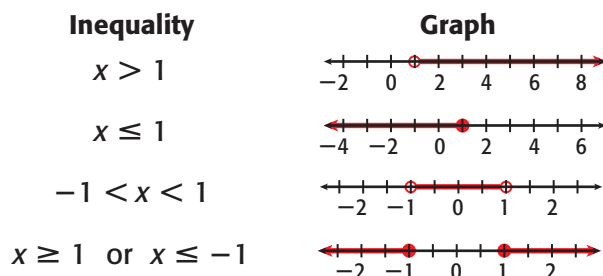


## Section Overview

## Inequalities

Lesson 11-5

**Why?** Students must be able to recognize and interpret inequalities before they can solve them and understand how to apply them.



○ Use an open circle when the graph does not include the point.

● Use a closed circle when the graph includes the point.

## One-Step Inequalities

Lessons 11-6, 11-7

**Why?** Many real-world situations can be modeled by inequalities. Examples include describing the temperature needed to prevent a substance from deteriorating, or showing how tall a child must be to ride a specific carnival ride. Students must be able to solve one-step inequalities to apply their understanding to problem solving.

Solve the inequalities.

$$x + 5 \leq -9$$

$$x \leq -14$$

Solve an addition or subtraction inequality as you would solve an equation.

$$-11y < -132$$

$$y > 12$$

Reverse the direction of the inequality symbol when you multiply or divide both sides by a negative number.

## Two-Step Inequalities

Lesson 11-8

**Why?** Solving two-step inequalities is the next logical step in solving inequalities. Students should be able to extend their problem-solving abilities to include problems with two-step inequalities.

Solve the inequality.

$$\frac{x}{-8} - 7 > 9$$

$$\frac{x}{-8} > 16$$

$$(-8)\frac{x}{-8} < (-8)16$$

$$x < -128$$

Add 7 to both sides of the inequality.

Reverse the direction of the inequality symbol when you multiply both sides of the inequality by  $-8$ .