

Lesson 13

Inequalities

NAME: _____



Start by navigating to the Online Lesson for instructions.

Objectives

- ✓ Solve one- and two-step inequalities, including inequalities with fractional coefficients
- ✓ Graph single variable inequalities on a number line

Why?

Inequalities help us model situations where there is not just one exact answer, but an acceptable range of answers. Inequalities define limits in real-life scenarios involving budgets, speed, or how many hours you can work. When we graph the solutions on a number line, we can visualize the range of answers and understand how they describe real-world situations with limits and choices.

Explore

Inequalities

▶ *Fill in the notes as you watch the video in the Online Lesson.*

- An _____ represents two expressions that are _____ to each other.
- The symbols that represent inequalities are:

Symbol	In words	On a number line
	is less than or equal to	
	is greater than or equal to	
	is less than	
	is greater than	

- A solution to an inequality is infinite because it represents a _____ of values.
- Use an open or closed _____ to show that a value is or is not included as a solution.
- Use _____ on a number line to represent all values that are true for the inequality.

Example 1

▶ Complete the example as you watch the video in the Online Lesson.

Solve. Graph the solutions on a number line.

$$2x - 7 < -5$$



Implement

Explain

- ▶ Add 7 to both sides

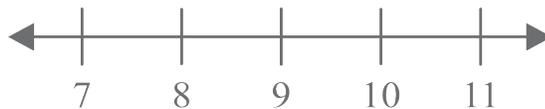
- ▶ Multiply by $\frac{1}{2}$ on both sides
- ▶ Open point, shade to the *left* of 1

Example 2

▶ Complete the example as you watch the video in the Online Lesson.

Solve. Graph the solutions on a number line.

$$\frac{2}{3}(x - 3) > 4$$



Implement

Explain

- ▶ Distribute
- ▶ Add 2 to both sides
- ▶ Multiply by $\frac{3}{2}$ on both sides
- ▶ Open point, shade to the *right* of 9

 Practice

Graph the solutions on a number line.

1) $x \geq \frac{1}{2}$



2) $x < -5$



3) $x \leq 0$



Solve. Graph the solutions on a number line.

4) $x + 4 > 6$



5) $3x + 2 \leq 7$



6) $\frac{2}{9}(x + 9) \geq 4$



To continue, return to the Online Lesson.