

7.5**Writing and Graphing Inequalities**

For use with Activity 7.5

Essential Question How can you use a number line to represent solutions of an inequality?

1 ACTIVITY: Understanding Inequality Statements

Work with a partner. Read the statement. Circle each number that makes the statement true, and then answer the questions.

a. “Your friend is *more than* 3 minutes late.”

–3 –2 –1 0 1 2 3 4 5 6

- What do you notice about the numbers that you circled?
- Is the number 3 included? Why or why not?
- Write four other numbers that make the statement true.

b. “The temperature is *at most* 2 degrees.”

–5 –4 –3 –2 –1 0 1 2 3 4

- What do you notice about the numbers that you circled?
- Can the temperature be exactly 2 degrees? Explain.
- Write four other numbers that make the statement true.

c. “You need *at least* 4 pieces of paper for your math homework.”

–3 –2 –1 0 1 2 3 4 5 6

- What do you notice about the numbers that you circled?
- Can you have exactly 4 pieces of paper? Explain.
- Write four other numbers that make the statement true.

7.5 Writing and Graphing Inequalities (continued)

- d. “After playing a video game for 20 minutes, you have *fewer than* 6 points.”

-2 -1 0 1 2 3 4 5 6 7

- What do you notice about the numbers that you circled?
- Is the number 6 included? Why or why not?
- Write four other numbers that make the statement true.

2 ACTIVITY: Understanding Inequality Symbols

Work with a partner.

- a. Consider the statement “ x is a number such that $x < 2$.”

- Can the number be exactly 2? Explain.
- Circle each number that makes the statement true.
-5 -4 -3 -2 -1 0 1 2 3 4
- Write four other numbers that make the statement true.

- b. Consider the statement “ x is a number such that $x \geq 1$.”

- Can the number be exactly 1? Explain.
- Circle each number that makes the statement true.
-5 -4 -3 -2 -1 0 1 2 3 4
- Write four other numbers that make the statement true.

7.5**Practice**

For use after Lesson 7.5

Write the word sentence as an inequality.

1. A number n is at least 4.
2. A number x is less than 12.

Tell whether the given value is a solution of the inequality.

3. $4x \leq 20$; $x = 2$
4. $y + 5 > 8$; $y = 1$

Graph the inequality on a number line.

5. $x < 5$



6. $w \geq -\frac{1}{4}$



7. You buy tickets to a professional football game. You are allowed to buy at most 4 tickets. Write and graph an inequality to represent the number of tickets you are allowed to buy.

