

2.1**Writing and Graphing Inequalities**

For use with Exploration 2.1

Essential Question How can you use an inequality to describe a real-life statement?

1 EXPLORATION: Writing and Graphing Inequalities

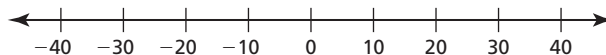
Go to *BigIdeasMath.com* for an interactive tool to investigate this exploration.

Work with a partner. Write an inequality for each statement. Then sketch the graph of the numbers that make each inequality true.

- a. **Statement** The temperature t in Sweden is at least -10°C .

Inequality

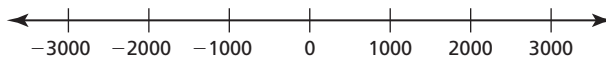
Graph



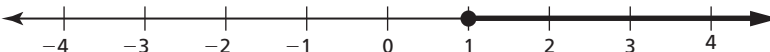
- b. **Statement** The elevation e of Alabama is at most 2407 feet.

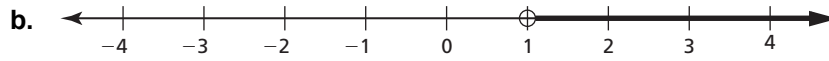
Inequality

Graph

**2 EXPLORATION: Writing Inequalities**

Work with a partner. Write an inequality for each graph. Then, in words, describe all the values of x that make each inequality true.

- a. 

2.1 Writing and Graphing Inequalities (continued)**2** **EXPLORATION:** Writing Inequalities (continued)**Communicate Your Answer**

3. How can you use an inequality to describe a real-life statement?

4. Write a real-life statement that involves each inequality.

a. $x < 3.5$

b. $x \leq 6$

c. $x > -2$

d. $x \geq 10$

2.1**Notetaking with Vocabulary**

For use after Lesson 2.1

In your own words, write the meaning of each vocabulary term.

inequality

solution of an inequality

solution set

graph of an inequality

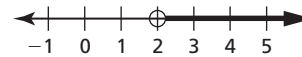
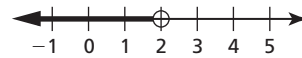
Core Concepts**Representing Linear Inequalities****Words** x is less than 2 x is greater than 2 x is less than or equal to 2 x is greater than or equal to 2**Algebra**

$x < 2$

$x > 2$

$x \leq 2$

$x \geq 2$

Graph**Notes:**

2.1 Notetaking with Vocabulary (continued)**Extra Practice**

In Exercises 1–4, write the sentence as an inequality.

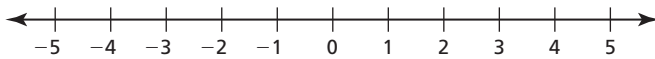
1. Twelve is greater than or equal to five times a number n .
2. One-third of a number h is less than 15.
3. Seven is less than or equal to the difference of a number q and 6.
4. The sum of a number u and 14 is more than 6.

In Exercises 5 and 6, tell whether the value is a solution of the inequality.

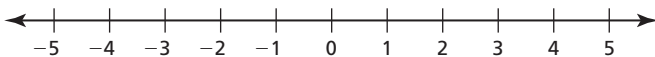
5. $d - 7 < 12$; $d = 19$ 6. $9 \geq 3n + 6$; $n = 1$

In Exercises 7–10, graph the inequality.

7. $x \geq 3$

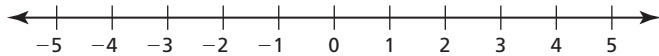


8. $x \leq 4$

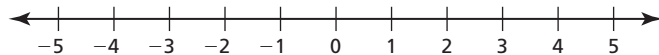


2.1 Notetaking with Vocabulary (continued)

9. $x > -1$



10. $x < 1$



In Exercises 11–14, write an inequality that represents the graph.

