Name _____ Class _____ Date _____

2-2

Comparing and Ordering Numbers

COMMON CORE

CC.6.NS.7a
CC.6.NS.7b

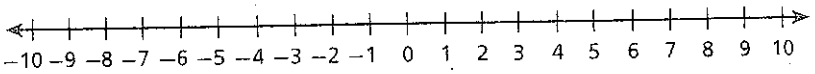
Essential question: *How do you compare and order positive and negative numbers?*

1 EXPLORE Comparing Positive and Negative Integers

The Westfield soccer league ranks its teams using a number called the "win/loss combined record." A team with more wins than losses will have a positive combined record, and a team with fewer wins than losses will have a negative combined record. The table shows the total win/loss combined record for each team at the end of the season.

Team	Sharks *A*	Jaguars *B*	Badgers *C*	Tigers *D*	Cougars *E*	Hawks *F*	Wolves *G*
Win/Loss Combined Record	−4	3	−7	−8	−1	−5	7

A On the number line, graph a point for each team according to its win/loss combined record.



B Which team had the best record in the league? How do you know?

C Which team had the worst record? How do you know?

REFLECT

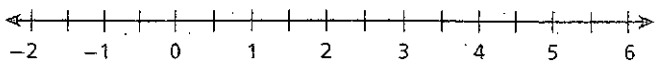
1. How would you evaluate the Westfield league as a whole? Explain.

When you read a number line from left to right, the numbers are in order from least to greatest.

2 EXPLORE Ordering Rational Numbers

Graph the following rational numbers on the number line:

1.6 3.8 4.9 2.0 5.3 −1.2



To list the numbers in order from least to greatest, read the numbers on the number line from left to right.

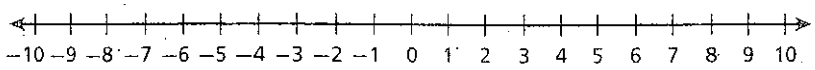
A Which number is third least? _____

B Which number is second greatest? _____

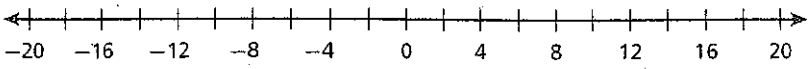
TRY THIS!

Graph each set of numbers on a number line. Then list the numbers in order from least to greatest.

2a. 5.6 −8 3.1 −4 7 −2



2b. −14 12 −7 11 18 −2 1 5 −8



REFLECT

2c. In a given list of numbers, the greatest number is negative. What can you say about the numbers in this list?

An **inequality** is a statement that two quantities are not equal. The symbols < and > are used to write inequalities.

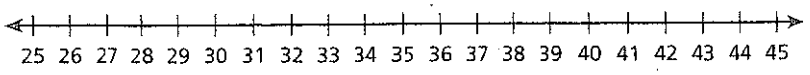
- The symbol > means "is greater than."
- The symbol < means "is less than."

You can use a number line to help write an inequality.

3 EXAMPLE Writing Inequalities

On December 18, the high temperature in Portland, Oregon, was 42 °F. On January 18, the high temperature was 28 °F. Which day was warmer?

Graph 42 and 28 on the number line.



A 42 is to the right of 28 on the number line.

This means that 42 is greater than / less than 28.

Use < or > to complete the inequality: 42 28.

B 28 is to the left of 42 on the number line.

This means that 28 is greater than / less than 42.

Use < or > to complete the inequality: 28 42.

The temperature was warmer on _____.

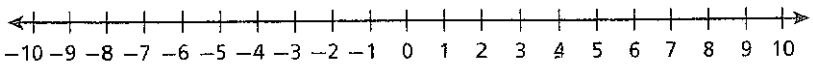
C In A and B, you wrote two inequalities to compare 42 and 28.
Write two inequalities to compare −6 and 7. _____

D Write two inequalities to compare −9 and −4. _____

TRY THIS!

Compare. Write > or <. Use the number line to help you, if necessary.

3a. −10 −2 **3b.** −6 6 **3c.** −7.1 −8.3



3d. Write two inequalities to compare −2 and −18. _____

3e. Write two inequalities to compare 39 and −39. _____

REFLECT

3f. Negative numbers are _____ than positive numbers.

3g. 0 is _____ than all negative numbers.

3h. What is the greatest negative integer? _____

3i. Is there a greatest positive integer? If so, what is it? If not, why not?

_____

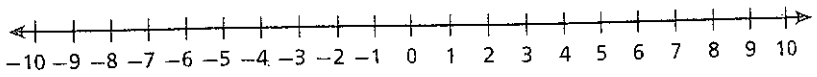
_____

3j. What is the least nonnegative number? _____

PRACTICE

1a. On the number line, graph a point for each of the following cities according to their temperatures.

City	A	B	C	D	E
Temperature (°F)	−9	10	−2	0	4



b. Which city was coldest? _____

c. Which city was warmest? _____

List the numbers in order from least to greatest.

2. 4, −6, 0, 8, −9, 1, −3

_____

3. 31, 5, 7, −0.1, 1, 1.5, −9

_____

4. −80, 88, 96, −14, 75, 59, −32

_____

5. −65, 34, 7.6, −13, 55, 62.5, −7.6

_____

6. Write two inequalities to compare −17 and −22. _____

7. Write two inequalities to compare 16 and −2. _____

Compare. Write < or >.

8. 9 ___ 2

9. 0 ___ 6

10. 3 ___ −7

11. 5 ___ −10

12. −1 ___ −3

13. −8 ___ −4

14. −4.5 ___ 1

15. −2 ___ −2.5

16. Which costs more, a fruit cup or veggies and dip? Use the given prices to write an inequality that shows your answer.

_____

Fruit cup	$2.49
Veggies and dip	$2.86
Yogurt	$1.97
Fruit smoothie	$3.83
Pretzels	$1.71

17. Which costs less, pretzels or yogurt? Use the given prices to write an inequality that shows your answer.

_____

18. Error Analysis At 9:00 P.M., the outside temperature was −3 °F. The newscaster says that the temperature will be −12 °F by midnight. Bethany says, "It will be warmer outside by midnight." Why is Bethany incorrect?

_____