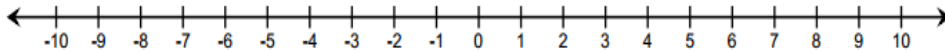


## Lesson 7: Ordering Integers and Other Rational Numbers

### Classwork

#### Exercise 1

- 1.
- a. Graph the number 7 and its opposite on the number line. Graph the number 5 and its opposite on the number line.



- b. Where does 7 lie in relation to 5 on the number line?
- c. Where does the opposite of 7 lie on the number line in relation to the opposite of 5?
- d. I am thinking of two numbers. The first number lies to the right of the second number on a number line. What can you say about the location of their opposites? (If needed, refer to your number line diagram.)

#### Example 1

The record low temperatures for a town in Maine for January are  $-20^{\circ}\text{F}$  and February  $-19^{\circ}\text{F}$ . Order the numbers from least to greatest. Explain how you arrived at the order.

**Exercises 2–4**

For each problem, order the rational numbers from least to greatest by first reading the problem, then drawing a number line diagram, and finally, explaining your answer.

- Jon's time for running the mile in gym class is 9.2 minutes. Jacky's time is 9.18 minutes. Who ran the mile in less time?
- Mrs. Rodriguez is a teacher at Westbury Middle School. She gives bonus points on tests for outstanding written answers and deducts points for answers that are not written correctly. She uses rational numbers to represent the points. She wrote the following on the students' papers: Student *A*:  $-2$  points, Student *B*:  $-2.5$  points. Did Student *A* or Student *B* perform worse on the test?
- A carp is swimming approximately  $8\frac{1}{4}$  feet beneath the water's surface, and a sunfish is swimming approximately  $3\frac{1}{2}$  feet beneath the water's surface. Which fish is swimming further beneath the water's surface?

**Example 2**

Henry, Janon, and Clark are playing a card game. The object of the game is to finish with the most points. The scores at the end of the game are Henry:  $-7$ , Janon:  $0$ , and Clark:  $-5$ . Who won the game? Who came in last place? Use a number line model, and explain how you arrived at your answer.

**Exercises 5–6**

For each problem, order the rational numbers from least to greatest by first reading the problem, then drawing a number line diagram, and finally, explaining your answer.

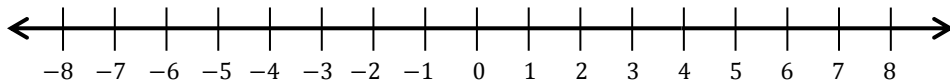
5. Henry, Janon, and Clark are playing another round of the card game. Their scores this time are as follows: Clark:  $-1$ , Janon:  $-2$ , and Henry:  $-4$ . Who won? Who came in last place?

6. Represent each of the following elevations using a rational number. Then, order the numbers from least to greatest.

Cayuga Lake	122 meters above sea level
Mount Marcy	1,629 meters above sea level
New York Stock Exchange Vault	15.24 meters below sea level

**Closing: What Is the Value of Each Number and Which Is Larger?**

Use your teacher's verbal clues and this number line to determine which number is larger.



**Problem Set**

1. In the table below, list each set of rational numbers in order from least to greatest. Then list their opposites. Then list the opposites in order from least to greatest. The first example has been completed for you.

Rational Numbers	Ordered from Least to Greatest	Opposites	Opposites Ordered from Least to Greatest
-7.1, -7.25	-7.25, -7.1	7.25, 7.1	7.1, 7.25
$\frac{1}{4}, -\frac{1}{2}$			
2, -10			
0, $3\frac{1}{2}$			
-5, -5.6			
$24\frac{1}{2}, 24$			
-99.9, -100			
-0.05, -0.5			
-0.7, 0			
100.02, 100.04			

2. For each row, what pattern do you notice between the numbers in the second and fourth columns? Why is this so?