



Lesson 7: Ordering Integers and Other Rational Numbers

Student Outcomes

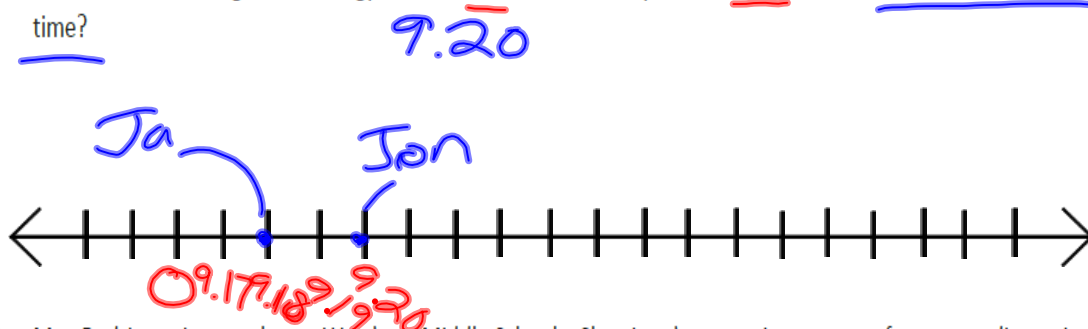
- Students write, interpret, and explain statements of order for rational numbers in the real-world.
- Students recognize that if $a < b$, then $-a > -b$, because a number and its opposite are equal distances from zero; students also recognize that moving along the horizontal number line to the right means the numbers are increasing.

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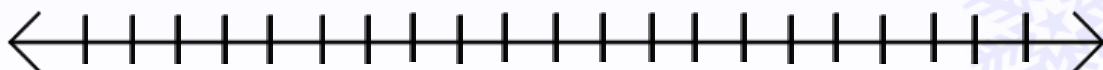
Exercises 2-4

For each problem, order the rational numbers from least to greatest. First read the problem, then draw a number line diagram, and finally, write/explain the answer. (Allow time for whole-group presentations.)

2. 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?

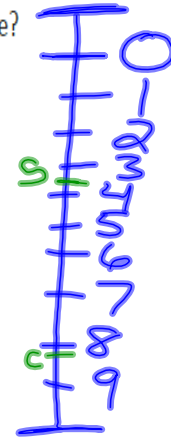


3. Mrs. Rodriguez is a teacher at Westbury Middle School. She gives bonus points on tests for outstanding written answers and deducts points for answers that are not written correctly. She uses rational numbers to represent the points. She wrote the following on the students' papers: Student A: -2 points, Student B: -2.5 points. Did Student A or Student B perform worse on the test?



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4. 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.



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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.

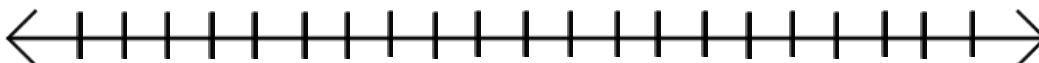
5. Henry, Janon, and Clark are playing another round of the card game. Their scores this time are as follows: Clark: -1 , Janon: -2 , and Henry: -4 . Who won? Who came in last place?

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



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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			

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