

Rational Number Rankings

Compare rational numbers and explain what their order means.

GRADE 6 • NY-6.NS.7.b

NY-6.NS.7.b "Write, interpret, and explain statements of order for rational numbers in real-world contexts."

NAME _____

DATE _____

ORDER ON THE NUMBER LINE

Numbers farther right on a number line are greater. Any negative number is less than zero, and among negative numbers, the number closer to zero is greater. Rewrite fractions or decimals in matching forms when that helps you compare them.

WORKED EXAMPLE

Write an inequality to compare $-7/8$ and -0.6 .

1. Rewrite $-7/8$ as -0.875 .
2. Compare -0.875 and -0.6 .
3. Since -0.875 is farther left, it is less.

Answer: $-7/8 < -0.6$

PRACTICE 6 problems

- 1** Write $<$, $>$, or $=$ to make the statement true:
 $-2/3$ ____ -0.65

ANSWER _____

- 2** Order these numbers from least to greatest.
Write a chain inequality: $1/4$, $-1/2$, 0 , -0.2 .

ANSWER _____

- 3** A forecast lists -1.75 C for Monday and -1.2 C for Tuesday. Write an inequality for the temperatures. Then tell which day is colder.

ANSWER _____

- 4** Two parking spaces are at elevations of -4.5 m and $-9/2$ m relative to street level. Write an order statement using $=$. Then interpret the statement.

ANSWER _____

- 5** Compare $-2 \frac{1}{3}$ and -2.25 . Write an inequality, then identify the number farther left on a number line.

ANSWER _____

- 6** Is the statement $-5/12 < -0.4$ true? Explain by writing $-5/12$ as a decimal.

ANSWER _____

APPLY IT Show your work

- 1** In a space game, each player's energy change is shown below. Kai: $-1\frac{1}{2}$ units. Nia: -1.25 units. Omar: 0.75 unit. Priya: -0.5 unit. Order the energy changes from least to greatest using a chain inequality. Which player lost the most energy?

WORK SPACE

ANSWER _____

- 2** A trail app records each marker's elevation relative to sea level. Use the table to write a chain inequality from lowest to highest. Which markers are below sea level?

TRAIL MARKER ELEVATIONS

Marker	Elevation relative to sea level (km)
Pine	-0.9
Creek	$\frac{1}{5}$
Ridge	-0.35
Lookout	0

ANSWER _____

CHALLENGE One step up

A water-level sensor must report a negative value x with exactly one digit after the decimal. The value must satisfy $-0.7 < x < 0.15$. List all possible values of x . Explain why -0.7 is not included.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write $<$, $>$, or $=$ to make the statement true: $-2/3$ ____ -0.65	$-2/3 < -0.65$
2	Order these numbers from least to greatest. Write a chain inequality: $1/4$, $-1/2$, 0 , -0.2 .	$-1/2 < -0.2 < 0 < 1/4$
3	A forecast lists -1.75 C for Monday and -1.2 C for Tuesday. Write an inequality for the temperatures. Then tell which day is colder.	$-1.75 < -1.2$; Monday is colder.
4	Two parking spaces are at elevations of -4.5 m and $-9/2$ m relative to street level. Write an order statement using $=$. Then interpret the statement.	$-4.5 = -9/2$; both spaces are 4.5 m below street level.
5	Compare $-2 \frac{1}{3}$ and -2.25 . Write an inequality, then identify the number farther left on a number line.	$-2 \frac{1}{3} < -2.25$; $-2 \frac{1}{3}$ is farther left.
6	Is the statement $-5/12 < -0.4$ true? Explain by writing $-5/12$ as a decimal.	Yes. $-5/12 = -0.4166\dots$, and $-0.4166\dots < -0.4$.

PART 2 • APPLY IT

- $-1 \frac{1}{2} < -1.25 < -0.5 < 0.75$; Kai lost the most energy.** Rewrite $-1 \frac{1}{2}$ as -1.5 , then compare the values from most negative to greatest. The least value represents the greatest energy loss.
- $-0.9 < -0.35 < 0 < 1/5$; Pine and Ridge are below sea level.** Compare the negative elevations first, then zero, then the positive elevation. Values less than 0 represent locations below sea level.

CHALLENGE

x can be -0.6 , -0.5 , -0.4 , -0.3 , -0.2 , or -0.1 . The value -0.7 is not included because x must be greater than -0.7 .

Accept equivalent fraction and decimal forms when the comparison and interpretation are correct. For the challenge, accept the six listed negative tenths in any order if the student explains that the inequality is strict.