LESSON MAKER PRO

Zero Distance Quest

Use absolute value to measure distance from zero.

GRADE 6 · 6.NR.3.5

6.NR.3.5 "Explain the absolute value of a rational number as its distance from zero on the number line; interpret absolute value as distance for a positive or negative quantity in a relevant situation."

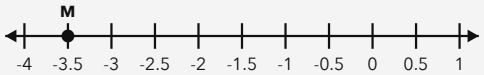
NAME _____ DATE _____

DISTANCE FROM ZERO

The absolute value of a rational number is its distance from 0 on a number line. Distance is never negative, so a number and its opposite have the same absolute value.

WORKED EXAMPLE

Use the number line. What is the distance of point M from 0? Write the absolute value.

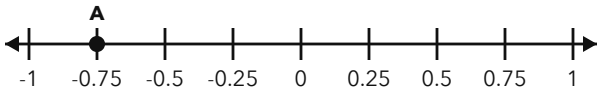


1. Point M is at -7/2.
2. Count 7/2 units from -7/2 to 0.
3. |-7/2| = 7/2.

Answer: 7/2

PRACTICE 6 problems

1 Use the number line. What is the absolute value of the number at A?



ANSWER _____

2 Use the number line. What is the distance from point B to 0?



ANSWER _____

3 Find |-8|.

ANSWER _____

4 Find |-1.6|.

ANSWER _____

5 A diver is at -12 1/4 meters relative to sea level. How far is the diver from sea level?

ANSWER _____

6 The absolute value of a rational number is 9/10. Write the negative rational number.

ANSWER _____

APPLY IT Show your work

1 On a winter morning, the temperature is -6 1/2°C. How many degrees away from 0°C is the temperature?

WORK SPACE

ANSWER _____

2 A drone is +14 2/3 meters relative to its launch level. How far is the drone from its launch level?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A skateboarding app records height relative to street level. One ramp is -4 1/5 feet, and one platform is +6 3/10 feet. Which location is farther from street level? Explain using absolute value. How much farther is it?

WORK SPACE AND ANSWER

ANSWER KEY # Zero Distance Quest

GRADE 6 · 6.NR.3.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the number line. What is the absolute value of the number at A?	**3/4**
2	Use the number line. What is the distance from point B to 0?	**7/4**
3	Find |-8|.	**8**
4	Find |-1.6|.	**1.6**
5	A diver is at -12 1/4 meters relative to sea level. How far is the diver from sea level?	**12 1/4 meters**
6	The absolute value of a rational number is 9/10. Write the negative rational number.	**-9/10**

PART 2 · APPLY IT

1. **6 1/2°C** Find the absolute value of -6 1/2. The temperature is 6 1/2 degrees from zero.
2. **14 2/3 meters** Find the absolute value of +14 2/3. A positive location is still that same distance from zero.

CHALLENGE

The platform is farther from street level. |-4 1/5| = 4 1/5 and |+6 3/10| = 6 3/10, so the platform is 2 1/10 feet farther.

Accept equivalent fraction or decimal forms when they are exact, such as 1.75 for 7/4 and -0.9 for -9/10. Require units for the context problems.