LESSON MAKER PRO

Integer Line Detectives

Use position and distance from zero to compare integers.

GRADE 6 · 6.NR.3.2

6.NR.3.2 "Order and plot integers on a number line and use distance from zero to discover the connection between integers and their opposites."

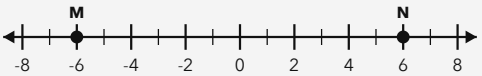
NAME _____ DATE _____

DISTANCE FROM ZERO

Integers to the left of zero are negative, and integers to the right of zero are positive. Opposites are the same distance from zero, but they are on different sides of zero. On a number line, numbers farther right are greater.

WORKED EXAMPLE

Look at the number line. Are M and N opposites? Explain using their distances from zero.

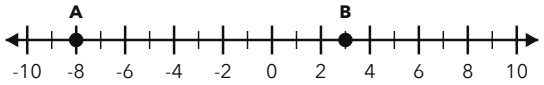


1. Point M is at -6.
2. Point N is at 6.
3. Both points are 6 units from 0.
4. The points are on opposite sides of 0.

Answer: Yes. M = -6 and N = 6, and each is 6 units from zero.

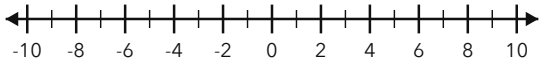
PRACTICE 6 problems

1 Use the number line. Write the values of A and B in order from least to greatest.



ANSWER _____

2 Plot C at -5 and D at 5 on the number line. Then write whether C and D are opposites.



ANSWER _____

3 Order these integers from least to greatest: 4, -11, 0, 9, -2.

ANSWER _____

4 Which integer is farther from zero, -13 or 10? State its distance from zero.

ANSWER _____

5 Write the opposite of each integer: -14 and 1.

ANSWER _____

6 An integer is 9 units from zero and is to the left of zero. What is the integer?

ANSWER _____

APPLY IT Show your work

1 In an online game, Imani has a score of -16 after penalties. Her teammate has a score of 7. Write the scores from least to greatest. Which score is farther from zero, and by how many points?

WORK SPACE

ANSWER _____

2 In a virtual diving game, Leo's character is at -18 meters. The next checkpoint is at the opposite integer. What is the checkpoint's position? How far apart are the character and the checkpoint?

WORK SPACE

ANSWER _____

CHALLENGE One step up

R, S, and T are each 11 units from zero. R is negative, S is the opposite of R, and T is positive. Can R, S, and T all be different integers? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Integer Line Detectives

GRADE 6 · 6.NR.3.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the number line. Write the values of A and B in order from least to greatest.	**-8, 3**
2	Plot C at -5 and D at 5 on the number line. Then write whether C and D are opposites.	**C at -5 and D at 5; yes, C and D are opposites.**
3	Order these integers from least to greatest: 4, -11, 0, 9, -2.	**-11, -2, 0, 4, 9**
4	Which integer is farther from zero, -13 or 10? State its distance from zero.	**-13; 13 units**
5	Write the opposite of each integer: -14 and 1.	**14; -1**
6	An integer is 9 units from zero and is to the left of zero. What is the integer?	**-9**

PART 2 · APPLY IT

1. **-16, 7; -16 is farther from zero by 9 points.** Place -16 to the left of 7 on a number line. Their distances from zero are 16 and 7, so the difference is 9.
2. **18 meters; 36 meters apart** The opposite of -18 is 18. The distance from -18 to 18 is 18 + 18, or 36 meters.

CHALLENGE

No. R = -11, S = 11, and T = 11, so S and T are the same integer.

Accept positive integers written with or without a plus sign. For plotted points, accept correctly placed points with the requested labels.