

Zero's Opposite Quest

Use number lines to find opposite locations.

GRADE 6 • NY-6.NS.6.a

NY-6.NS.6.a "Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line. Recognize that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite."

NAME _____

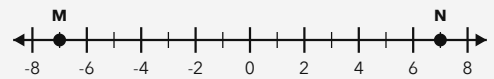
DATE _____

OPPOSITE LOCATIONS

Numbers that are the same distance from 0 but on different sides of 0 are opposites. Change a positive number to a negative number, or change a negative number to a positive number. The opposite of an opposite returns to the starting number, and 0 stays at 0.

WORKED EXAMPLE

Use the number line. Which point is opposite point M?

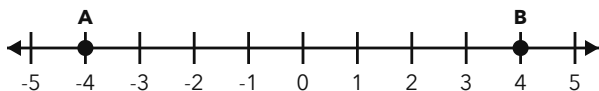


1. Point M has coordinate -7.
2. Point N has coordinate +7.
3. -7 and +7 are the same distance from 0 on opposite sides.
4. Point N is opposite point M.

Answer: N

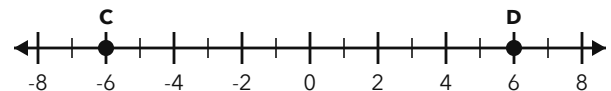
PRACTICE 6 problems

- 1** Use the number line. Which point is opposite point A?



ANSWER _____

- 2** Use the number line. What is the coordinate of the point opposite C?



ANSWER _____

- 3** Write the opposite of -9.

ANSWER _____

- 4** Find the opposite of the opposite of $-3/5$.

ANSWER _____

- 5** What is the opposite of 0?

ANSWER _____

- 6** A point has coordinate 2.75. Write the coordinate of its opposite.

ANSWER _____

APPLY IT Show your work

- 1** In a video game, a player's marker is at -12 on a level meter whose starting point is 0. A power-up sends the marker to the location opposite -12. What number shows the marker's new location?

WORK SPACE

ANSWER _____

- 2** At a skate park challenge, positions on a ramp are measured from the center, 0. Kai is at $+8 \frac{1}{2}$. What coordinate is the location opposite Kai's position?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Point T is $3 \frac{1}{4}$ units to the left of 0. Point U is opposite T. What is the coordinate of the opposite of U? Explain why.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Use the number line. Which point is opposite point A?	B
2	Use the number line. What is the coordinate of the point opposite C?	+6
3	Write the opposite of -9.	+9
4	Find the opposite of the opposite of $-3/5$.	$-3/5$
5	What is the opposite of 0?	0
6	A point has coordinate 2.75. Write the coordinate of its opposite.	-2.75

PART 2 • APPLY IT

1. **+12** The opposite of -12 is +12 because it is 12 units from 0 on the other side.
2. **-8 1/2** The opposite of +8 1/2 is -8 1/2, the same distance from 0 on the other side.

CHALLENGE

-3 1/4. Point T is at -3 1/4, point U is at +3 1/4, and taking the opposite of U returns to -3 1/4.

Accept positive answers with or without a plus sign. For the challenge, accept any explanation that identifies the two opposite changes and returns to the original coordinate.