LESSON MAKER PRO

Zero Side Switch

Use number lines to find opposites of integers.

GRADE 6 · 6.NR.3.3

6.NR.3.3 "Recognize and explain that opposite signs of integers indicate locations on opposite sides of zero on the number line; recognize and explain that the opposite of the opposite of a number is the number itself."

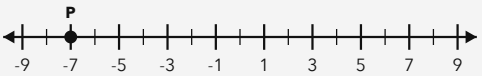
NAME _____ DATE _____

OPPOSITE LOCATIONS

Integers with opposite signs and the same distance from 0 are on opposite sides of 0 on a number line. To find an opposite, move the same distance through 0 to the other side. Taking the opposite twice returns to the starting number.

WORKED EXAMPLE

Look at the number line. What is the opposite of point P? What is the opposite of that number?

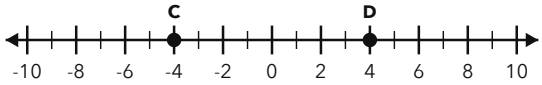


1. Point P is 7 units left of 0, so P = -7.
2. The opposite is 7 units right of 0, so it is +7.
3. The opposite of +7 is -7.

Answer: The opposite of P is +7. The opposite of +7 is -7.

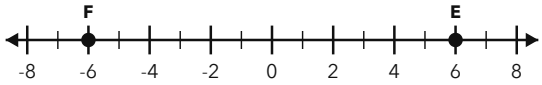
PRACTICE 6 problems

1 Look at the number line. Which point is the opposite of point C? Explain how the number line shows this.



ANSWER _____

2 Look at the number line. What integer is point F? Is F the opposite of point E? Explain.



ANSWER _____

3 Write the opposite of -12.

ANSWER _____

4 Find the opposite of the opposite of 9.

ANSWER _____

5 Start with +15. Write its opposite. Then write the opposite of your result.

ANSWER _____

6 Maya says that the opposite of the opposite of -3 is +3. Is Maya correct? Explain.

ANSWER _____

APPLY IT Show your work

1 In a game design club, a treasure room is at -20 on a vertical map, where 0 is street level. A lookout is at +20. Are the two locations opposites? Explain.

WORK SPACE

ANSWER _____

2 In a racing game, Kai's car is at +14 on a route with 0 as the start line. A teleport sends the car to its opposite location, then sends it to the opposite location again. Where does the car end?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Omar starts at +24 on a number line. He says that taking the opposite twice will put him at -24 because each opposite changes the sign. Is Omar correct? Write the result after each opposite and explain.

WORK SPACE AND ANSWER

ANSWER KEY

Zero Side Switch

GRADE 6 · 6.NR.3.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Look at the number line. Which point is the opposite of point C? Explain how the number line shows this.	**D, because D is 4 units from 0 on the opposite side.**
2	Look at the number line. What integer is point F? Is F the opposite of point E? Explain.	**F = -6. Yes, F and E are the same distance from 0 on opposite sides.**
3	Write the opposite of -12.	**+12**
4	Find the opposite of the opposite of 9.	**9**
5	Start with +15. Write its opposite. Then write the opposite of your result.	**-15, then +15**
6	Maya says that the opposite of the opposite of -3 is +3. Is Maya correct? Explain.	**No. The opposite of -3 is +3, and the opposite of +3 is -3.**

PART 2 · APPLY IT

1. **Yes. They are both 20 units from 0 and are on opposite sides of 0.** Compare each location to 0. The signs differ, and each location is 20 units from 0.
2. **+14** The first teleport sends +14 to -14. The second teleport sends -14 back to +14.

CHALLENGE

No. The opposite of +24 is -24, and the opposite of -24 is +24. Taking the opposite twice returns to the starting number.

Accept answers that use either a plus sign or no sign for positive integers. For explanations, accept wording that states the locations are equally far from 0 and on opposite sides of 0.