LESSON MAKER PRO

Zero Pair Power

Find opposites and show how they cancel.

GRADE 7 · 7.NR.1.1

7.NR.1.1 "Show that a number and its opposite have a sum of 0 (are additive inverses). Describe situations in which opposite quantities combine to make 0."

NAME _____ DATE _____

OPPOSITES MAKE ZERO

A number and its opposite are the same distance from 0, but on different sides of 0. When you add opposite quantities, they cancel and the sum is 0. Zero is its own opposite.

WORKED EXAMPLE

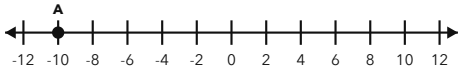
Show that -20 and 20 are additive inverses.

1. Write the sum: -20 + 20.
2. Add the opposite quantities: -20 + 20 = 0.
3. The sum is 0, so -20 and 20 are additive inverses.

Answer: -20 and 20 are additive inverses.

PRACTICE 6 problems

1 Point A is at -10. Write the opposite of Point A.



ANSWER _____

2 Write the opposite of 3/4.

ANSWER _____

3 -17 + x = 0. Find x.

ANSWER _____

4 Complete the equation: 6.2 + ___ = 0.

ANSWER _____

5 Are -15 and 15 additive inverses? Use an equation to justify your answer.

ANSWER _____

6 Which pair is made of additive inverses? A. -4 and -4 B. -12 and 12 C. 5 and -5/2

ANSWER _____

APPLY IT Show your work

1 During a video game round, Kai earns 14 points on one turn and loses 14 points on the next turn. What is the total change in Kai's score? Explain why.

WORK SPACE

ANSWER _____

2 A robotics club tracks two changes to its supply budget. What is the total change in the budget? Explain why.

SUPPLY BUDGET CHANGES

Event	Change in Budget
Snack sale	+25
Parts purchase	-25

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says, "Two numbers can sum to 0 only if one is positive and one is negative." Is the student always correct? Explain. Include one nonzero pair and explain what happens when the number is 0.

WORK SPACE AND ANSWER

ANSWER KEY

Zero Pair Power

GRADE 7 · 7.NR.1.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Point A is at -10. Write the opposite of Point A.	**10**
2	Write the opposite of 3/4.	**-3/4**
3	-17 + x = 0. Find x.	**17**
4	Complete the equation: 6.2 + ___ = 0.	**-6.2**
5	Are -15 and 15 additive inverses? Use an equation to justify your answer.	**Yes. -15 + 15 = 0.**
6	Which pair is made of additive inverses? A. -4 and -4 B. -12 and 12 C. 5 and -5/2	**B. -12 and 12**

PART 2 · APPLY IT

1. **0 points. +14 and -14 are opposites, so they sum to 0.** Add the score changes: 14 + (-14) = 0. The equal gain and loss are opposite quantities.
2. **0 dollars. +25 and -25 are opposites, so they sum to 0.** Add the two changes: 25 + (-25) = 0. The money earned and spent are equal opposite quantities.

CHALLENGE

No. -21 + 21 = 0, but 0 + 0 = 0. Zero is its own opposite, and it is neither positive nor negative.

Accept equivalent equations and explanations that correctly state that opposite quantities add to 0. For the challenge, students must identify that 0 is its own opposite.