LESSON MAKER PRO

Back to Zero

Find the quantities that cancel.

GRADE 7 · 7A.NS.A.8.a

7A.NS.A.8.a "Identify and explain situations where the sum of opposite quantities is 0 and opposite quantities are defined as additive inverses."

NAME _____ DATE _____

ADDITIVE INVERSES

Opposite quantities have the same size but different signs. They are called additive inverses because their sum is 0. To find a missing amount that makes a sum 0, use the opposite of the amount you know.

WORKED EXAMPLE

Find 11 + (-11). Explain why the sum is 0.

1. The addends have the same size.
2. One is positive and one is negative, so they are additive inverses.
3. 11 + (-11) = 0.

Answer: 0; 11 and -11 are additive inverses.

PRACTICE 6 problems

1 Find 8 + (-8).

ANSWER _____

2 Fill in the blank: -13 + ___ = 0.

ANSWER _____

3 Write the additive inverse of -6. Then find the sum of the two numbers.

ANSWER _____

4 Find 3/4 + (-3/4).

ANSWER _____

5 Find -2.5 + 2.5. Are the addends additive inverses?

ANSWER _____

6 A student says 15 + (-15) = 30. Find the correct sum and explain the mistake.

ANSWER _____

APPLY IT Show your work

1 In a video game, you earn 24 points in one round and lose 24 points in the next. What is your total change in points? Explain why.

WORK SPACE

ANSWER _____

2 Your lunch account gets a $6.75 deposit. You then spend $6.75 on lunch. What is the total change in the account balance? Explain why.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game score changes by -17 points, then by x points, then by -5 points. The total change is 0. Find x. Explain how opposite quantities help you solve.

WORK SPACE AND ANSWER

Back to Zero

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find 8 + (-8).	**0**
2	Fill in the blank: -13 + ___ = 0.	**13**
3	Write the additive inverse of -6. Then find the sum of the two numbers.	**6; -6 + 6 = 0**
4	Find 3/4 + (-3/4).	**0**
5	Find -2.5 + 2.5. Are the addends additive inverses?	**0; yes**
6	A student says 15 + (-15) = 30. Find the correct sum and explain the mistake.	**0; 15 and -15 have different signs, so they are additive inverses and cancel.**

PART 2 · APPLY IT

1. **0 points; +24 and -24 are additive inverses.** Add 24 + (-24) = 0. Earning and losing the same number of points cancel.
2. **$0; +$6.75 and -$6.75 are additive inverses.** The deposit adds $6.75 and the purchase subtracts $6.75, so 6.75 + (-6.75) = 0.

CHALLENGE

x = 22; the two losses total -22 points, so a gain of 22 points is needed. -22 and 22 are additive inverses.

Accept equivalent signed-number expressions. For explanations, students should connect equal amounts with opposite signs to a sum of 0.