LESSON MAKER PRO

Zero Sum Stories

Explore how equal gains and losses cancel.

GRADE 6 · 6.NS.9a

6.NS.9a "Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged."

NAME _____ DATE _____

OPPOSITES MAKE ZERO

A positive quantity and an equal negative quantity are opposites. When you add opposites, the result is 0 because they cancel.

WORKED EXAMPLE

A store receives 11 notebooks and ships out 11 notebooks. What is the change in its notebook stock?

1. Receiving 11 notebooks is +11.
2. Shipping out 11 notebooks is -11.
3. Add the changes: (+11) + (-11) = 0.

Answer: 0 notebooks of change

PRACTICE 6 problems

1 Find the sum: (+7) + (-7).

ANSWER _____

2 One object has a charge of -4 units. Another has a charge of +4 units. What is their combined charge?

ANSWER _____

3 What number makes (+9) + x = 0?

ANSWER _____

4 Find x: -6 + x = 0.

ANSWER _____

5 Find the sum: (+3/4) + (-3/4).

ANSWER _____

6 A phone battery gains 8 percentage points of charge, then loses 8 percentage points. Write an addition equation for the total change.

ANSWER _____

APPLY IT Show your work

1 A gamer spends 14 coins on an upgrade, then earns 14 coins from a quest. Treat coins earned as positive and coins spent as negative. What is the net change in coins? Explain what the result means.

WORK SPACE

ANSWER _____

2 You pay $12 for a concert ticket, then receive a $12 refund. Treat money paid as negative and money received as positive. What is the net change in your money? Explain what the result means.

WORK SPACE

ANSWER _____

CHALLENGE One step up

On a hike, you climb 13 meters, descend 5 meters, then descend x more meters. How far is the last descent if your total change in elevation is 0? Write an addition equation and explain why the change is 0.

WORK SPACE AND ANSWER

ANSWER KEY # Zero Sum Stories

GRADE 6 · 6.NS.9a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the sum: (+7) + (-7).	**0**
2	One object has a charge of -4 units. Another has a charge of +4 units. What is their combined charge?	**0 units**
3	What number makes (+9) + x = 0?	**x = -9**
4	Find x: -6 + x = 0.	**x = 6**
5	Find the sum: (+3/4) + (-3/4).	**0**
6	A phone battery gains 8 percentage points of charge, then loses 8 percentage points. Write an addition equation for the total change.	**(+8) + (-8) = 0**

PART 2 · APPLY IT

1. **The net change is 0 coins. The gamer has the same number of coins as before.** Add -14 + 14 = 0. The coins earned replace the coins spent.
2. **The net change is $0. You have the same amount of money as before you bought the ticket.** Add -12 + 12 = 0. The refund cancels the payment.

CHALLENGE

13 + (-5) + (-8) = 0, so x = 8 meters. The total descent is 13 meters, which cancels the 13-meter climb.

Accept equivalent addition equations that show equal positive and negative quantities. For explanations, look for the idea that a result of 0 means no net change.