

Name Key

Period _____

3.2 Guided Notes (Add Integers)

Vocabulary: Adding Integers

- We call numbers like -2 and 2 opposites because they are the same distance from zero, but on opposite sides.
- We also call numbers like these Additive Inverses because they add to zero.
- This also gives us the Additive Inverse Property. It states that a number and its opposite always sum to zero.

Adding Integers with the Same Sign

- To add integers with the same sign, add their absolute values.
 - The sum is positive if both integers are positive.
 - The sum is negative if both integers are negative.

Practice: Adding Integers with the Same Sign

- $-3 + (-2)$
 - The sum is negative because both integers are negative.
 - Answer -5
- $-26 + (-17)$
 - The sum is negative because both integers are negative.
 - Answer -43
- $-5 + (-6) = -11$
- $-8 + (-2) = -10$
- $-7 + (-11) = -18$
- $-20 + (-5) = -25$
- $-16 + (-7) = -23$

Adding Integers with Different Signs

- To add integers with different signs, subtract their absolute values.
 - The sum is positive if the positive integer's absolute value is greater.
 - The sum is negative if the negative integer's absolute value is greater.
- When you add integers with different signs, start at zero. Move right for positive integers. Move left for negative integers.

Practice: Adding Integers with Different Signs

- $5 + (-3)$
 - The sum is positive because the positive integer's absolute value is greater.
 - Answer: 2
- $-3 + 2$
 - The sum is negative because the negative integer's absolute value is greater.
 - Answer: -1
- $6 + (-7)$ -1
- $-15 + 19$ 4
- $7 + (-7)$ 0
- $-8 + 3$ -5
- $2 + (-15) + (-2) = -13 + (-2) = \textcircled{-15}$
- $10 + (-12)$ -2
- $-13 + 18$ 5

10. $(-14) + (-6) + 6$

$-20 + 6 = -14$

Practice: Writing Addition Sentences

11. A roller coaster starts at point A. It goes up 20 feet, down 32 feet, and then up 16 feet to point B. Write an addition sentence to find the height at point B in relation to point A. Then find the sum and explain its meaning.

Addition Sentence: $20 + (-32) + 16$

Sum: 4

Meaning: Point B is 4 feet higher than Point A.

12. The temperature is -3 degrees. An hour later it drops 6 degrees and two hours later it rises 4 degrees. Write an addition expression to describe this situation. Then find the sum and explain its meaning.

Addition Sentence: $-3 + (-6) + 4$

Sum: -5

Meaning: The new temperature is -5°F .