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Add and Subtract Integers

N.5.H N.5.I N.6.F N.8.H N.8.I N.9.H N.9.I

Example

A golfer shot -5 the first round, $+3$ the second round, -4 the third round, and -2 the fourth round. What was the golfer's final score for the tournament?

- A. -14 B. -11
C. -8 D. 13

Example

What is $-8 - (-4)$?

- A. -12
B. -4
C. 4
D. 12

Thinking It Through

Solve — *Simplify It* You can solve a multistep problem by solving simpler problems. One way to solve this problem is to find the sum of the first and second rounds, then the sum of third and fourth rounds, and then add their partial sums:

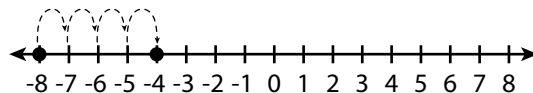
Rounds 1 and 2: $-5 + 3 = -2$

Rounds 3 and 4: $-4 + (-2) = -6$

Add the sums: $-2 + (-6) = -8$, answer C.

Thinking It Through

Solve To subtract a positive integer, move left on a number line. To subtract a negative integer, you move right on a number line. So *subtracting a negative integer is like adding a positive integer*.



The difference is -4 , answer B: $-8 - (-4) = -8 + 4 = -4$.

Review

- Add integers with like signs: add as you would whole numbers. The sum of two negative integers will be negative.
- Add integers with different signs: subtract the integer with the lesser **absolute value** from the integer with the greater absolute value. The sign of the sum will be the same as the integer with the greater absolute value.
- Use these examples to help you subtract integers:

Positive – Positive

The **difference** can be positive, 0, or negative.

$$6 - 2 = 4 \quad 3 - 5 = -2$$

Negative – Positive

The difference is *always* negative.

$$-7 - 5 = -12$$

Positive – Negative

The difference is *always* positive.

$$4 - (-5) = 4 + 5 = 9$$

Negative – Negative

The difference can be positive, 0, or negative.

$$-4 - (-6) = -4 + 6 = 2 \quad -7 - (-4) = -7 + 4 = -3$$

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Directions: Carefully read each question. Circle the letter of the correct answer.

1. Which subtraction expression has a difference of -6 ?

- A. $3 - 9$
- B. $-4 - (-2)$
- C. $-9 - 3$
- D. $-3 - (-3)$



Use a number line if it helps you “see” the difference.

2. In Ohio, the record high temperature is 113°F and the record low temperature is -39°F . What is the difference between the record high and the record low temperatures?

- A. 64°F
- B. 74°F
- C. 144°F
- D. 152°F

3. In the first quarter of a football game, a quarterback threw for a total of 25 yards and was sacked four times for a total of -36 yards. What was the quarterback’s total yardage for the first quarter?

- A. -61
- B. -11
- C. 11
- D. 61

4. Which statement is true?

- A. The sum of two positive numbers can be negative.
- B. The sum of a negative number and a positive number is always positive.
- C. The difference of two negative numbers can be positive.
- D. The difference of two positive numbers is always positive.