NAME _____ DATE _____ PERIOD _____

Lesson 1 Reteach

Integers and Absolute Value

A **negative number** is a number less than zero. A **positive number** is a number greater than zero. The set of **integers** can be written {…, −3, −2, −1, 0, 1, 2, 3, …} where … means *continues indefinitely*. Two integers can be compared using an **inequality**, which is a mathematical sentence containing < or >.

Example 1

Write an integer for each situation. Then identify its opposite and describe what it means.

a. 16 feet below the surface

The integer is −16.
The opposite is 16.
It means 16 feet above the surface.

b. 5 strokes over par

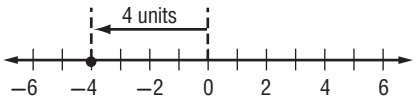
The integer is +5 or 5.
The opposite is −5.
It means 5 strokes below par.

Numbers on opposite sides of zero and the same distance from zero have the same **absolute value**. The symbol for absolute value is two vertical bars on either side of the number. $|2| = 2$ and $|-2| = 2$

Example 2

Evaluate each expression.

a. $|-4|$



$|-4| = 4$ On the number line, −4 is 4 units from 0.

b. $|-3| + |6|$

$|-3| + |6| = 3 + 6$ $|-3| = 3, |6| = 6$

$= 9$ Simplify.

Exercises

Write an integer for each situation. Then identify its opposite and describe what it means.

1. 2 inches less than normal

2. 13°F above average

3. a deposit of $50

4. a loss of 8 yards

Evaluate each expression if $x = 8$ and $y = -3$.

5. $12 + |y|$

6. $x - |y|$

7. $2|x| + 3|y|$

8. $x + |y|$

9. $6|y|$

10. $3x - 4|y|$