

LESSON  
**11.2**

# Adding Integers

**Goal:** Add integers.



**Vocabulary**

Absolute value:

the distance that a # is from 0

absolute value is ALWAYS positive

**EXAMPLE 1 Modeling Integer Addition**

**Golf** During a game of golf, you score 4 over par on the first hole, 3 under par on the second hole, and 1 over par on the third hole. What is your total score with respect to par after the first three holes?

**Solution**

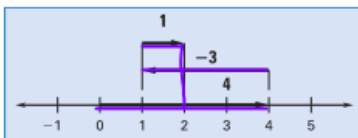
To understand the problem, read and organize the information.

First hole: 4 means 4 over par

Second hole: -3 means 3 under par

Third hole: 1 means 1 over par

Start at 0 on a number line. Use arrows to represent over par and under par. Move to add a positive number and to add a negative number.



+ → right  
- → left

First hole:  $0 + 4 = 4$

Second hole:  $4 + -3 = 1$

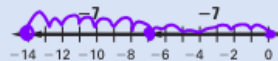
Third hole:  $1 + 1 = 2$

**Answer:** Your total score after the first three holes is 2 over par.

Words like "over" and "under" can be used to indicate positive and negative integers respectively.

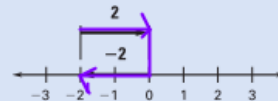
**Your turn now** Find the sum using a number line.

1.  $-7 + (-7)$



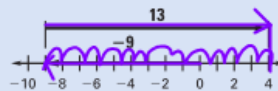
-14

2.  $-2 + 2$



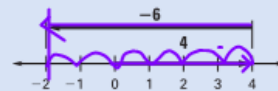
0

3.  $-9 + 13$



4

4.  $4 + (-6)$



-2

**Adding Integers**

**Words**

**Same Sign** To add two integers with the same sign, add their **numbers** and write their **sign**.

**Different Signs** To add two integers with different signs, first subtract the  from the . Then write the sign of the number with the .

**Numbers**

$1 + 4 = 5$   
 $-1 + (-4) = -5$

$-3 + 11 = 8$   
 $3 + (-11) = -8$

$11 - 3 = 8$

Different signs

- ① Which do I have more of?
- ② How many more?

**EXAMPLE 2 Adding Integers**

a. In the sum  $-2 + (-9)$ , the numbers have . To find the sum, find  |  |  and write .

$$-2 + (-9) = -11$$

b. In the sum  $-5 + 2$ , the numbers have  and  has the  absolute value. To find the sum, find  |  |  and write .

$$-5 + 2 = -3$$

c. In the sum  $-8 + 15$ , the numbers have  and  has the greater absolute value. To find the sum, find  |  | .

$$-8 + 15 = 7$$

When you find the sum of two numbers with different signs, you first find the number with the greater absolute value.

**Your turn now** Find the absolute value of each number in the expression. Then find the sum.

5. $-12 + (-3)$	6. $-8 + (-1)$	7. $6 + (-11)$	8. $32 + (-32)$
-15	-9	-5	0