PreAlgebraCoach.com

Adding Integers

Unit 1 Lesson 6

Adding Integers

Students will be able to:

Add integers using rules and number line

Key Vocabulary:

An integer

Number line

Rules for Adding Integers

- There are two rules that you must follow when adding integers.
- You must look at the signs of each number that you are adding to determine which rule to use!

Rule 1:

If the signs are the same, add and keep the same sign.

$(+) + (+) = (+)$ **Add** the numbers.

The sum of two positive integers is always **positive.**

$(-) + (-) = (-)$ **Add** the numbers.

The sum of two negative integers is always **negative.**

Rule 2:

If the signs are different, subtract the numbers and use the sign of the larger number.

$(-) + (+) =$ **Subtract** the numbers and take **the sign of the bigger number.**

$(+) + (-) =$ **Subtract** the numbers and take **the sign of the bigger number.**

Rule 2:

- The sum of a positive integer and a negative integer is sometimes positive, sometimes negative, and sometimes zero.
- The sum of a negative number and its opposite positive number of the same size equals zero.

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

a. $3 + 6 =$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

a. $3 + 6 = 9$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

b. $(-12) + (-34) =$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

b. $(-12) + (-34) = -46$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

c. $(-23) + (-34) =$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

c. $(-23) + (-34) = -57$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

d. $45 + 21 =$

Sample Problem 1: **Find the sum of each expression below using the rules for adding integers.**

d. $45 + 21 = 66$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

a. $(-13) + 14 =$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

a. $(-13) + 14 = 1$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

b. $28 + (-11) =$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

b. $28 + (-11) = 17$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

c. $(-17) + 11 =$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

c. $(-17) + 11 = -6$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

d. $\mathbf{100 + (-100) =}$

Sample Problem 2: **Find the sum of each expression below using the rules for adding integers.**

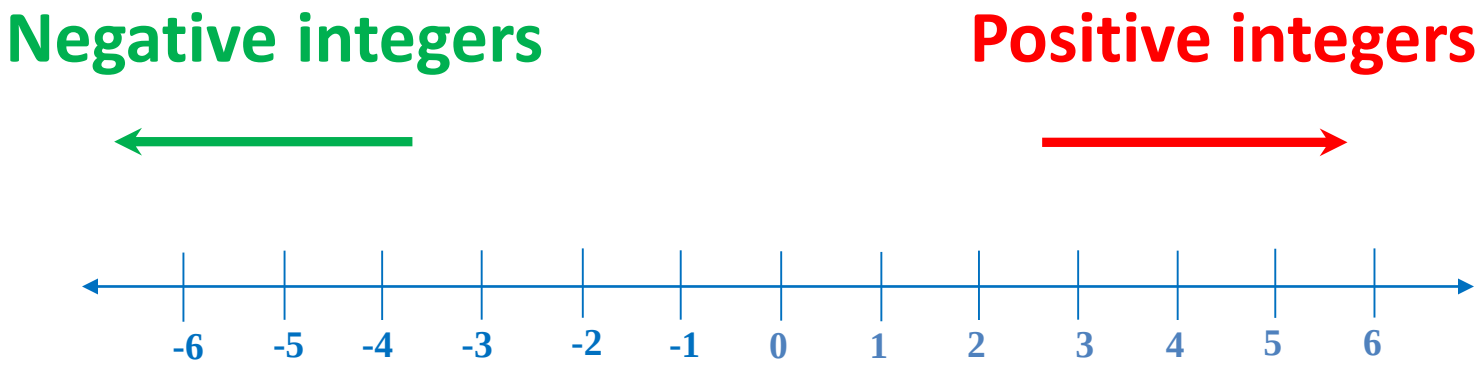
d. $\mathbf{100 + (-100) = 0}$

Using the Number Line to Add Integers

- We can also use the number line and direction arrows to illustrate addition of integers.
- Let a positive number be represented by a right-facing arrow and a negative number be represented by a left-facing.

Adding Integers

- To add two integers, find the point on the number line corresponding to the first addend (integer).
- The sum is the number directly below the tip of the arrow.

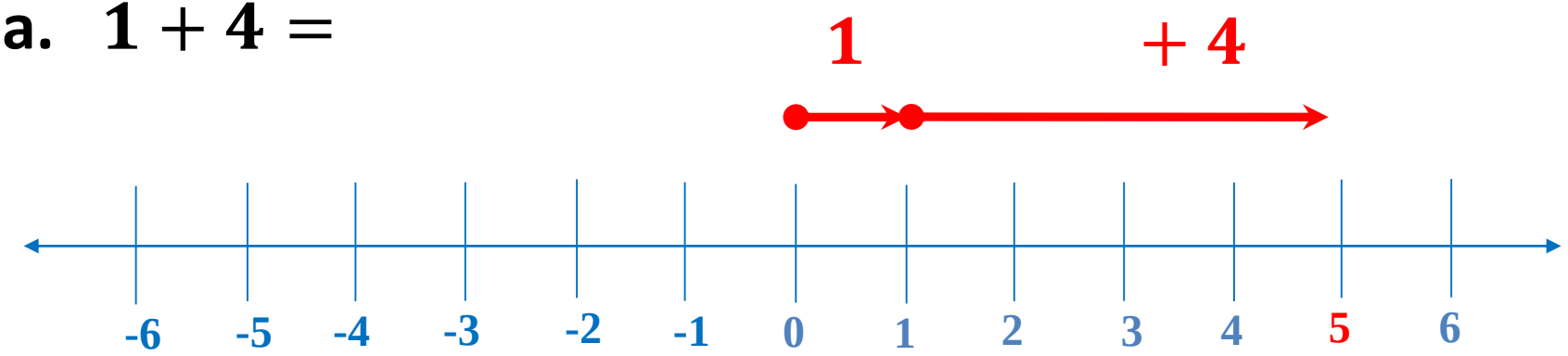


Sample Problem 3: **Show the addition on the number line. Then write the sum.**

a. $1 + 4 =$

Sample Problem 3: Show the addition on the number line. Then write the sum.

a. $1 + 4 =$



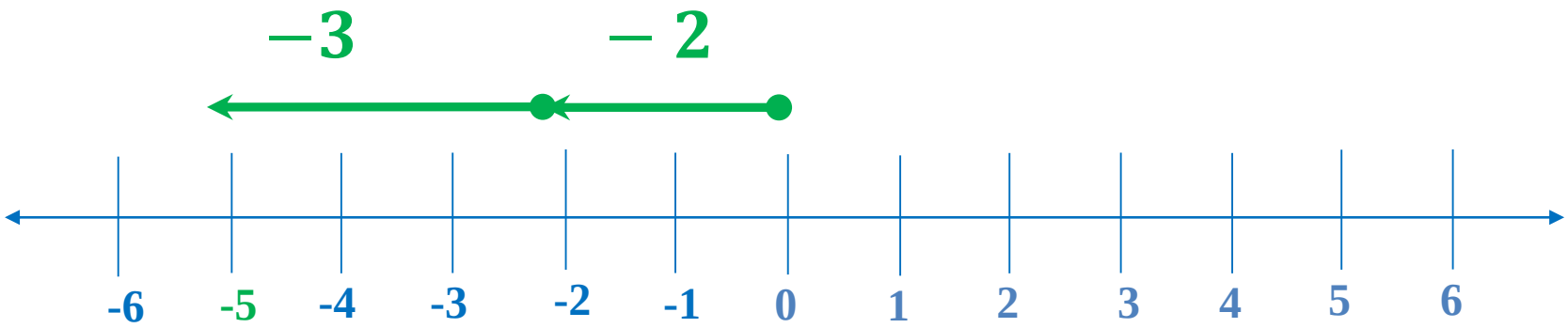
$1 + 4 = 5$

Sample Problem 3: **Show the addition on the number line. Then write the sum.**

b. $(-2) + (-3) =$

Sample Problem 3: Show the addition on the number line. Then write the sum.

b. $(-2) + (-3) =$



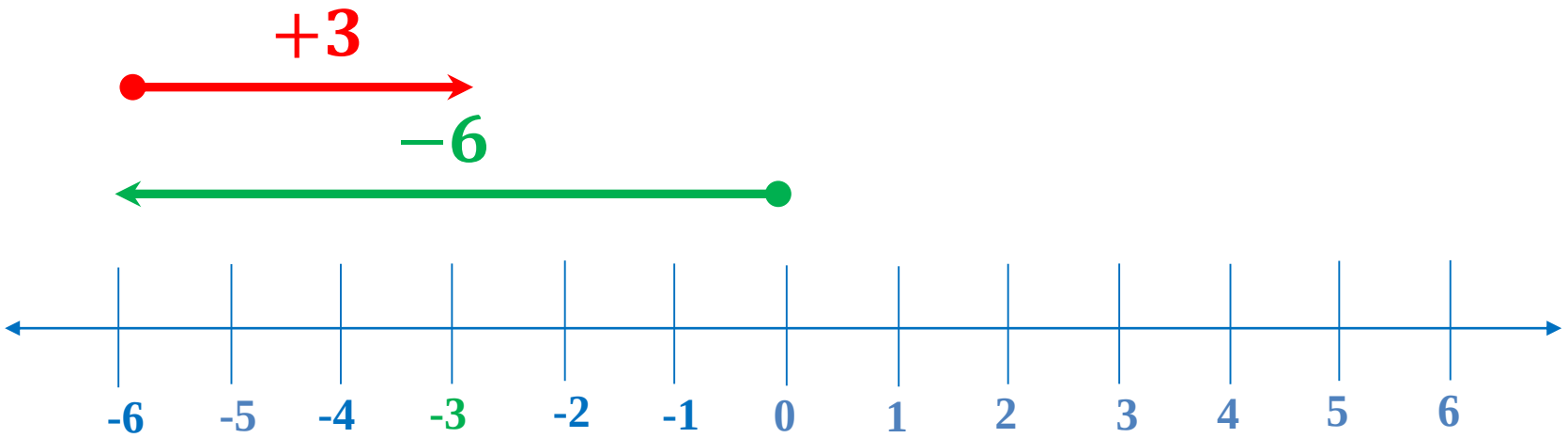
$(-2) + (-3) = -5$

Sample Problem 3: **Show the addition on the number line. Then write the sum.**

c. $(-6) + 3 =$

Sample Problem 3: Show the addition on the number line. Then write the sum.

c. $(-6) + 3 =$



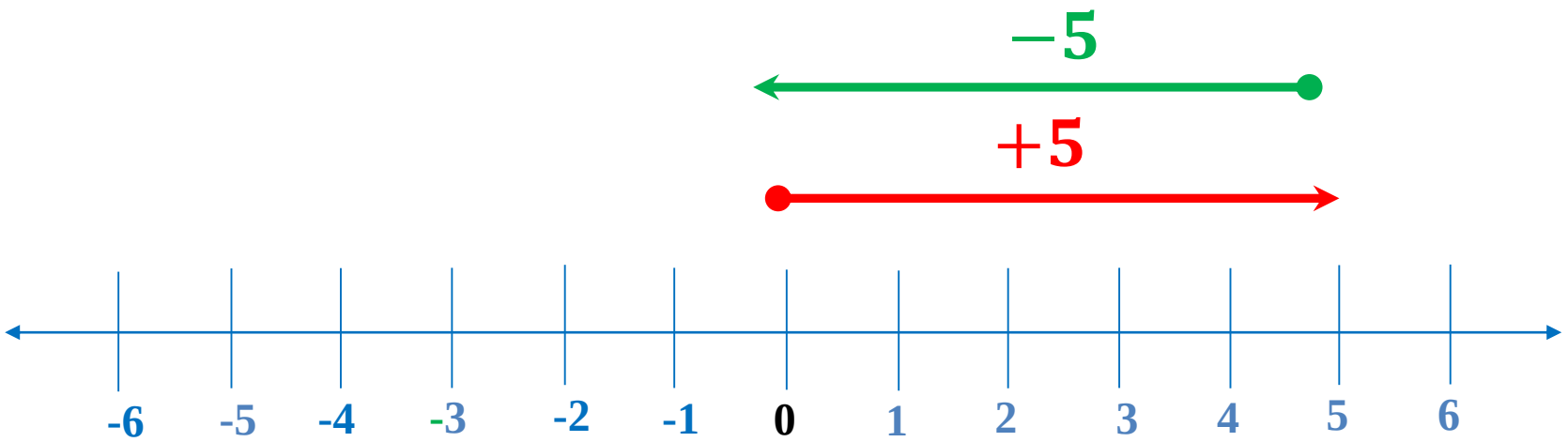
$(-6) + 3 = -3$

Sample Problem 3: **Show the addition on the number line. Then write the sum.**

d. $5 + (-5) =$

Sample Problem 3: Show the addition on the number line. Then write the sum.

d. $5 + (-5) =$



$5 + (-5) = 0$

Sample Problem 4: Solve each expression below.

a. $(-123) + (-140) + 32 =$

Sample Problem 4: Solve each expression below.

a. $(-123) + (-140) + 32 =$

$= (-263) + 32 =$

$= -231$

Sample Problem 4: Solve each expression below.

b. $128 + 23 + (-34) =$

Sample Problem 4: Solve each expression below.

b. $128 + 23 + (-34) =$

$= 151 + (-34) =$

$= 117$

Sample Problem 4: Solve each expression below.

c. $(-70) + [-2 + 24]^2 =$

Sample Problem 4: Solve each expression below.

c. $(-70) + [-2 + 24]^2 =$

$= (-70) + [22]^2 =$

$= (-70) + 484 =$

$= 414$