Chapter 2 Section 1

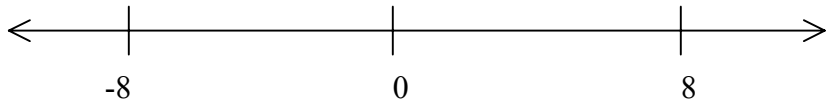
Integers and the Number Line

Positive Numbers (n): are numbers greater than zero;

Negative Numbers (n): are numbers less than zero;

Math Symbols:

	Read As	Extended definition
n > 0;	n is greater than zero	Greater than (>): the open end contains the greater number
sign (+)	positive or plus	Give value to a number or describes an mathematical operation
n < 0;	n is less than zero	Less than (<): the closed end contains the lesser number
sign (-)	negative or minus	Give value to a number or describes an mathematical operation



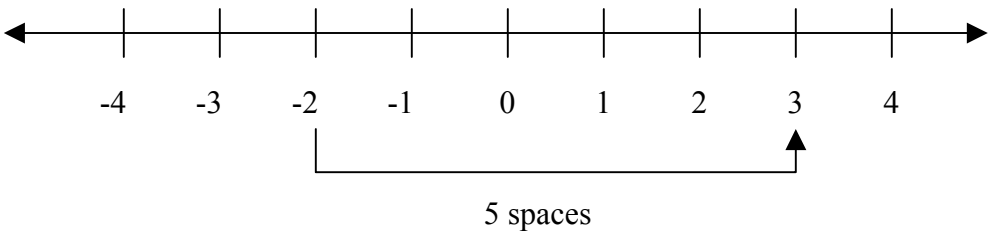
1. On the number line numbers get larger to as we move from Left to Right.
2. Numbers that appear to the Right of a given number are Greater Than (>) the given number.
3. Numbers that appear to the Left of a given number are Less Than (<) the given number.

Integers are –4, -3, -2, -1, 0, 1, 2, 3, 4

Zero is not negative or positive. Zero is the origin on the number line.

Example:

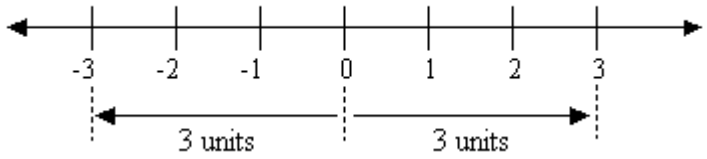
1a. On the number line what number is 5 units to the right of negative (-2)



Solution:

3 is 5 units to the right of (-2)

Opposites



The distance from 0 to 3 on the number line is (3) three units.
The distance from 0 to -3 on the number line is (3) three units.

Two numbers that are the same distance from zero on the number line, but on **opposite** sides of zero are called **Opposites.**

Example 1:

(-3) is opposite of (3) and (3) is opposite of (-3)

Note:

For a number (n): the opposite of (n) is (-n)
and the opposite of (-n) is (n)

Example 2:

a. – (3) = -3 The opposite of positive three is a negative three.
b. – (-3) = 3 The opposite of negative three is a positive three.

Using Symbols:

	Equation	Read As
1.	6 + 2	six plus two
2.	+2	positive two
3.	6 – 2	six minus two
4.	-2	negative two

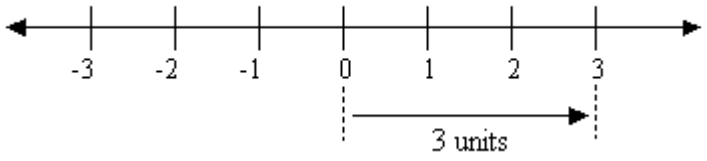
Absolute Value:

Absolute Value of a number is the distance from zero to that number on the number line.

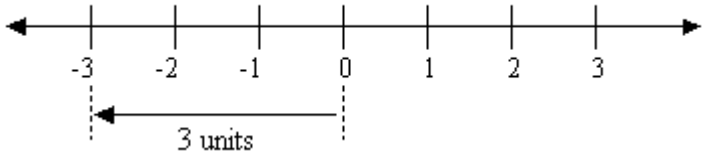
a. That distance is never negative.
b. The symbol for Absolute Value is " | | ".

Example of Absolute Value:

a. The distance from 0 to 3 is three units. Thus the | 3 | = 3 [The Absolute Value of 3 is 3]



b. The distance from 0 to -3 is three units. Thus the | - 3 | = 3 [The Absolute Value of - 3 is 3]



Note:

The Absolute Value of a positive number is positive. | 5 | = 5

The Absolute Value of a negative number is positive. | -5 | = 5

The Absolute Value of a Zero is Zero. | 0 | = 0