

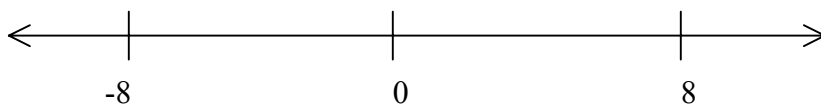
## Integers and the Number Line

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

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

### Math Symbols:

	<u>Read As</u>	<u>Extended definition</u>
$n > 0$ ;	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



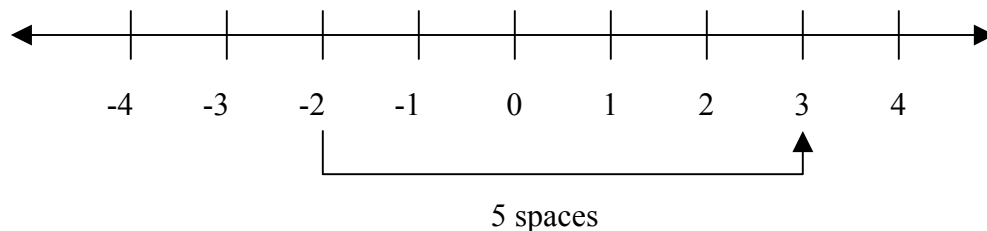
1. On the number line numbers get larger to as we move from Left to Right.
2. Numbers that appear to the Right of a given number are Greater Than ( $>$ ) the given number.
3. Numbers that appear to the Left of a given number are Less Than ( $<$ ) the given number.

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:

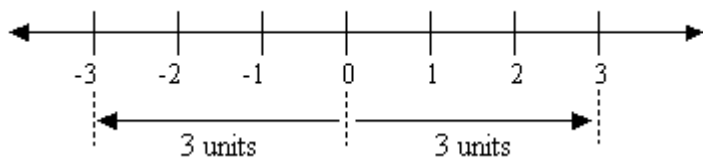
1a. On the number line what number is 5 units to the right of negative (-2)



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:

	<u>Equation</u>	<u>Read As</u>
1.	$6 + 2$	six plus two
2.	$+2$	positive two
3.	$6 - 2$	six minus two
4.	$-2$	negative two

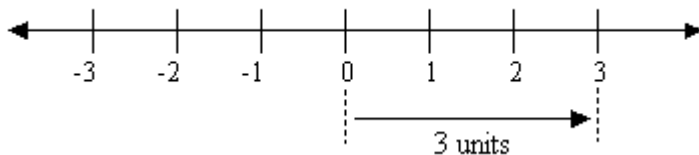
### **Absolute Value:**

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

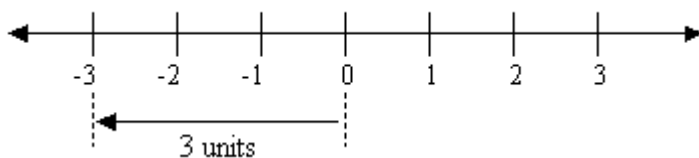
- a. That distance is never negative.
- b. The symbol for Absolute Value is “| |”.

**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.  $|0| = 0$