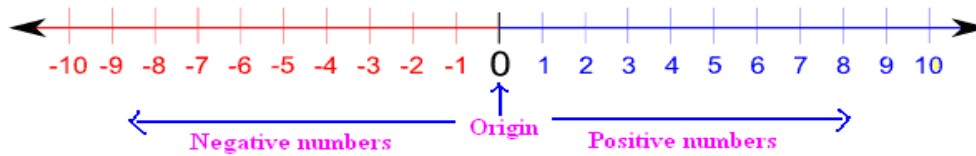


## 2.1 Introduction to Integers

### Def. Real number line



**Def. Integers:**  $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

### \* Comparing Integers

Inequality Symbols	Meaning
$<$	is less than
$>$	is greater than

### \* Absolute Value of a Number

**Def.** The **absolute value** of a number is the distance from 0 to that number on the number line.

**Ex.**  $|5| =$

**Ex.**  $|-5| =$

### \* Finding Opposites

**Def.** Two numbers that are the same distance from 0 on the number line but are on opposite sides of 0 are called **opposites**.

**Ex.** The opposite of 2 is \_\_\_\_\_.

**Ex.** The opposite of  $-5$  is \_\_\_\_\_.

**Note:** Negative Symbol, “ $-$ ”, can be used to represent (i) signed number, (ii) opposites, (iii) subtraction.

**Ex 1.** The world’s deepest bat colony spends each winter in NY zinc mine at a depth of 3805 feet. Represent this position with an integer.

**Ex 2.** The tamarack tree, a kind of larch, commonly grows at the edge of the arctic tundra and survives winter temperatures of 85 degrees below zero, Fahrenheit. Represent this temperature with an integer in degree Fahrenheit.

**Ex 3.** Graph  $-4$ ,  $2$ ,  $-1$ , and  $-2$  on the number line.

**Ex 4.** Simplify:

a.  $|-19| =$

b.  $-|2| =$

c.  $-|-2| =$

d.  $-(-2) =$

e.  $-(91) =$

**Ex 5.** Insert  $<$  or  $>$  to make a true statement.

a.  $-|-7| \underline{\hspace{1cm}} -(7)$

b.  $-(-101) \underline{\hspace{1cm}} |-100|$

c.  $-(11) \underline{\hspace{1cm}} -(-2)$

**Ex 6.** Write the given numbers in order from least to greatest:  $3^3$ ,  $-|-12|$ ,  $-(-10)$ ,  $-4$ ,  $-|2|$ .