

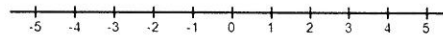
## 6.1 Integers

**Objective:** Represent values that are less than zero with numbers

**Vocabulary:**

- Positive numbers - all numbers that are \_\_\_greater\_\_\_ than zero
- Negative numbers - all numbers that are \_\_\_less than\_\_\_ than zero
- Opposites - two numbers that are the same distance from 0 on a number line.

3 and -3 are opposites:



- Integers - the set of whole numbers and their opposites. They can be both \_\_\_positive\_\_\_ and \_\_\_negative\_\_\_.

**Examples:** Write a positive or negative integer that represents the situation:

1.) A hiker climbs 900 feet up a mountain.     900    

2.) You have a debt of \$24.    -24   

3.) A student loses three points for being late to class.    -3   

4.) A savings account earns ten dollars.    10   

**Examples:** Graph each integer and its opposite.

5.)   6  

6.)  -4  

7.)  -10

8.)   1

## 6.2 Comparing and Ordering Integers

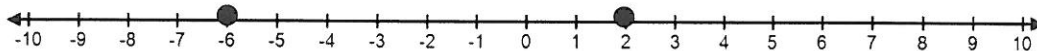
**Objective:** Use a number line to order real-life events

**Vocabulary:**

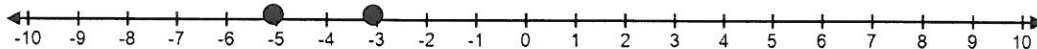
- Greater than symbol:  $>$
- Less than symbol:  $<$

**Examples:** Compare integers on a number line. Draw both numbers on the line. Then use an inequality to show your answer.

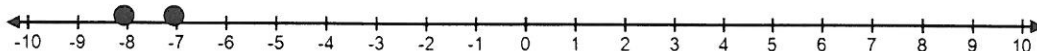
1.) Compare 2 and -6.  $2 > -6$



2.) Compare -5 and -3.  $-5 < -3$



3.) Compare -8 and -7.  $-8 < -7$

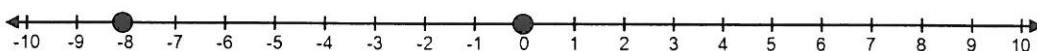


4.) Order -4, 3, 0, -1, -2 from least to greatest. Graph each integer on a number line.



Order your numbers: -4, -2, -1, 0, 3

5.) A number is greater than -8 and less than 0. What is the greatest integer value of this number? -1



## 6.3 Fractions and Decimals on the Number Line

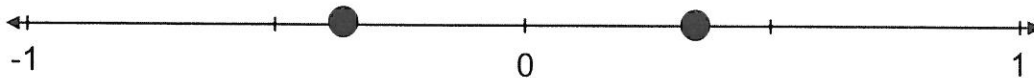
**Objective:** Use a number line to compare positive and negative fractions and decimals.

### Vocabulary:

- **Least Common Denominator:** In two or more fractions, it is the least common multiple of the denominators (Example:  $\frac{4}{5}$  and  $\frac{3}{4}$ , LCD = 20)

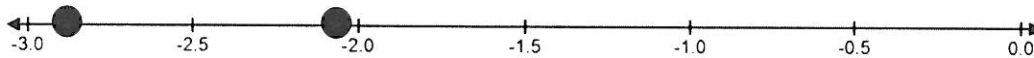
### Examples:

1.) Graph  $\frac{1}{3}$  and its opposite.

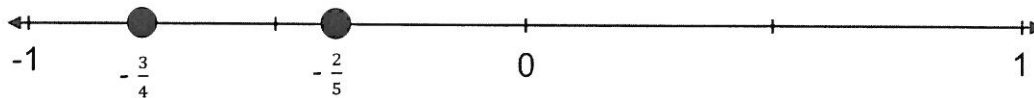


Compare integers on a number line. Draw both numbers on the line. Then use an inequality to show your answer.

2.) Compare -2.08 and -2.8.       $-2.08$  \_\_\_\_\_  $-2.8$

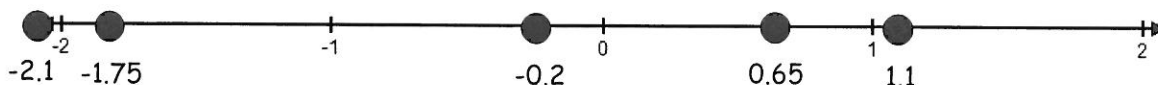


3.) Compare  $-\frac{2}{5}$  and  $-\frac{3}{4}$ .       $-\frac{2}{5} > -\frac{3}{4}$



4.) Arrange these decimals from **least** to **greatest** on the number line below:

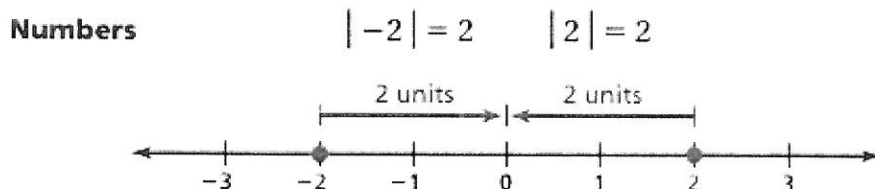
- 1.75                      1.1                      0.65                      - 0.2                      - 2.1



## 6.4 Absolute Value Teacher Notes

**Objective:** Find the absolute value of an integer.

**Vocabulary:** The Absolute Value of a number is the distance between the number and zero on a number line. The absolute value of  $a$  is written as  $|a|$



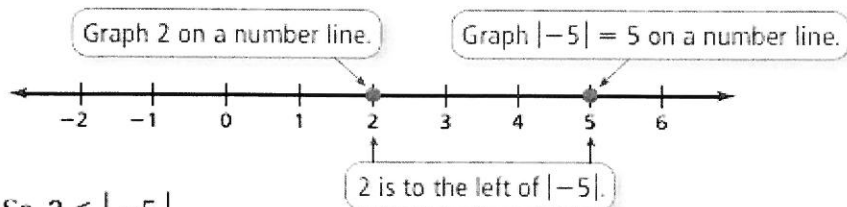
The absolute value of  $-2$  equals  $2$ . The absolute value of  $2$  equals  $2$ .

**Example:**

Find the Absolute Value

1.) $ 8  = 8$	2.) $ -6  = 6$	3.) $ 0  = 0$
4.) $ \frac{1}{4}  = \frac{1}{4}$	5.) $ -7\frac{1}{3}  = 7\frac{1}{3}$	6.) $ -12.9  = 12.9$

**Compare 2 and  $|-5|$ .**



$\therefore$  So,  $2 < |-5|$ .

**Compare**

7.) $ -4  > -2$	8.) $-5 <  5 $
9.) $ 9  < 10$	10.) $3.9 =  3.9 $

## 6.5 The Coordinate Plane

**Objective:** Graph and locate points that contain negative numbers in a coordinate plane.

### Vocabulary:

- **Coordinate Plane:** Formed by the intersection of a horizontal number line and a vertical number line.
- **Origin:** The point where the number lines intersect. **( 0, 0 )**
- **Quadrants:** Separate the coordinate plane into four regions.

### Examples:

1.) Label the four quadrants.

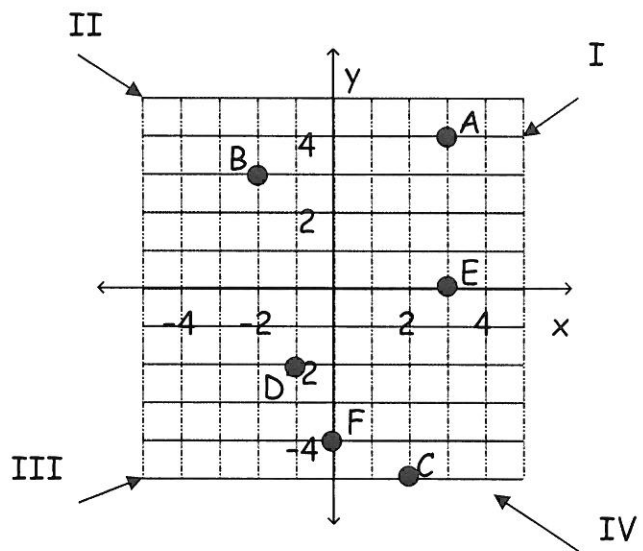
2.) Plot the following points on the graph:

All points are (x, y)

A (3, 4)      B (-2, 3)

C (2, -5)      D (-1, -2)

E (3, 0)      F (0, -4)



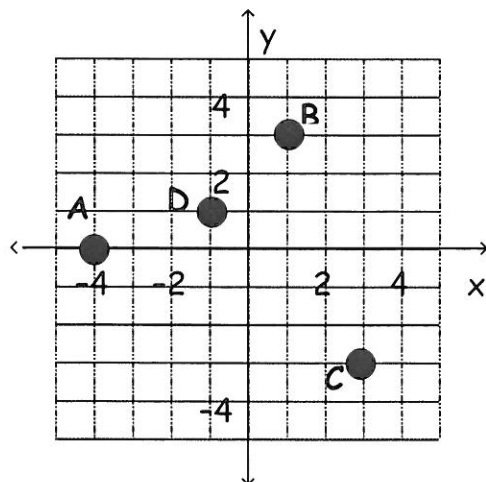
3.) Write the coordinate for each point.

A = (-4, 0)

B = (1, 3)

C = (3, -3)

D = (-1, 1)



4a.) The coordinates of a square are: A (3, 4); B(0, 4); C(0, 1) Plot the three coordinates.

b.) What is coordinate D?

D = (3, 1)

c.) What is the length of each side?

3 units

d.) What is the perimeter of the square?

12 units

