

## 9-1 Understanding Integers (Page 450)

**Positive Numbers** - greater than zero

They may be written with a positive (+) sign but are usually written without it

**Negative Numbers** - less than zero

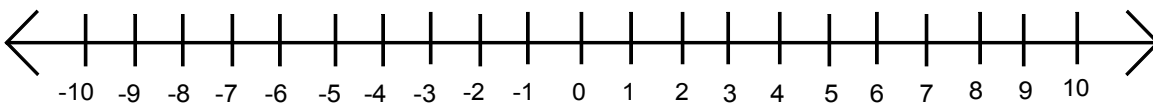
They are ALWAYS written with a negative (-) sign

Various ways to represent different situations:

- A gain of 20 yards in football = + 20
- Spending \$75 = -75
- 10 feet below sea level

**Opposites** are the same distance from 0 but on the opposite side of 0

Graphing integers and their opposites:



Ex # 1 = 9

Ex# 2 = -8

**Absolute Value** - distance from that number to zero -WILL ALWAYS BE POSITIVE

Finding Absolute Value:

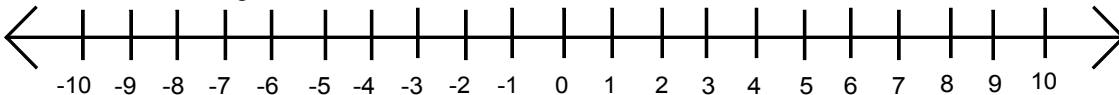
$$(7) = 7 \qquad (-9) = 9 \qquad (13) = 13$$

$$(14) = \qquad (-6) = \qquad (-11) =$$

## 9-2 Comparing and Ordering Integers ( Page 454)

Comparing Integers using a number line:

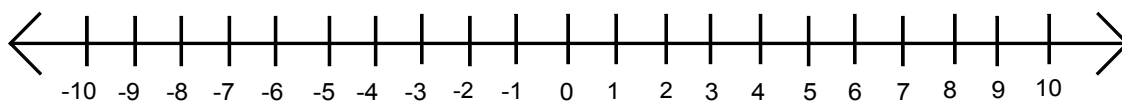
- If both are positive numbers - the one with greater value
- If one positive and one negative - the positive number
- If both are negative numbers - the one closer to zero



$$\# 1) 5 \bigcirc 9 \qquad \# 2) 5 \bigcirc -3 \qquad \# 3) -7 \bigcirc -9 \qquad \# 4) 0 \bigcirc -4$$

Ordering integers: Same thing - use a number line

$$\# 1) 4, -2, 1 \qquad \# 2) -2, 0, 2, 5$$



### 9-3 The Coordinate Plane (Page 458)

**Coordinate Plane** is formed by two number lines in a plane that intersect at right angles. The point of intersection is zero zero

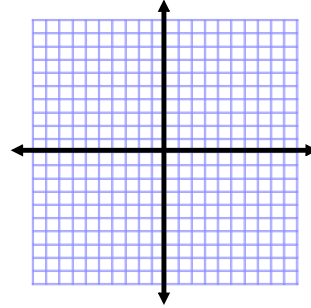
**Axes** - the two number lines

**X Axis** - horizontal axis

**Y Axis** - vertical axis

**Quadrants** - four parts of the coordinate plane

**Origin** - the point where the two axes intersect



Ordered Pair ( X coordinate, Y Coordinate) You must walk to the elevator before you take it up or down.

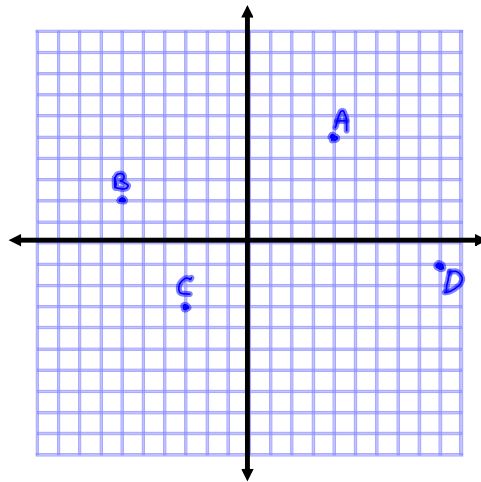
Give coordinate for the following letters:

Ex # 1) A

Ex # 2) B

Ex # 3) C

Ex # 4) D



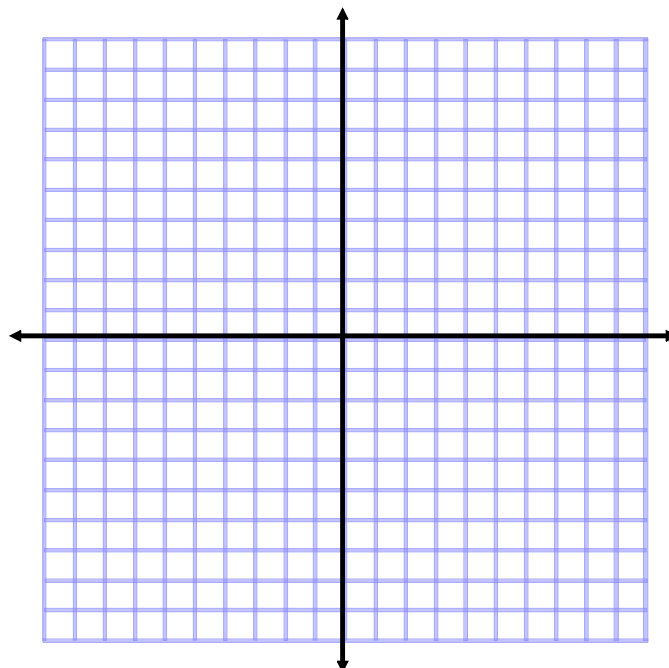
Graph the each point given the ordered pair

Ex # 5) J (6, 4)

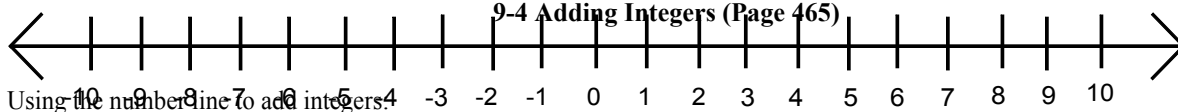
Ex # 6) O (3, 3)

Ex # 7) S (-4, 0)

Ex # 8) H (-5, -2)



### 9-4 Adding Integers (Page 465)

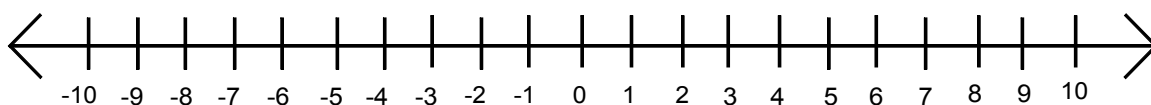


Start with first number

If the second number is positive - move to the right that many spaces

If the second number is negative - move to the left that many spaces

Ex # 1)  $6 + (-5) =$       Ex # 2)  $-7 + 4 =$       Ex # 3)  $-8 + (-3) =$



Evaluate for the given value of X

Ex # 4)  $X + 6$     $X = -3$    Ex # 5)  $X + (-4)$     $X = (-4)$

### 9-5 Subtracting Integers (Page 470)

Subtracting integers is the same thing as adding the opposite of the second number.

- 1) Change the subtraction sign to addition
- 2) Change the sign of the second number to it's opposite

Ex # 1)  $7 - 4 =$       Ex # 2)  $-8 - (-2) =$       Ex # 3)  $4 - 6 =$

Evaluate the expression:

$X - (-4) =$     $X = -4$        $X - 8 =$     $X = -9$

### 9-6 Multiplying Integers (Page 473)

When signs are the same the answer is **positive**.

When the signs are different the answer is **negative**.

Ex # 1)  $4 \times 3 =$       Ex # 2)  $2 \times (-4) =$       Ex # 3)  $-5 \times 2$       Ex # 4)  $-3 \times -4$

### 9-7 Dividing Integers (Page 476)

When signs are the same the answer is **positive**.

When the signs are different the answer is **negative**.

Ex # 1)  $12 \div (-3) =$

Ex # 2)  $-15 \div (-3) =$

Ex # 3) Evaluate

$X = -18$

### 9-8 Solving Integer Equations (482)

Perform the opposite operation (INVERSE OPERATION)

Ex #1)  $X + 4 = -2$

Ex # 2)  $X - 6 = -5$

Ex # 3)  $-3x = 15$

Ex #4)