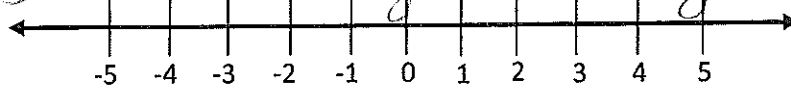# Integers and Absolute Value

What is an integer? Any number!! Can be positive or negative.

← values decrease as you move left on a number line. ←

→ values increase as you move right on the number line →

Number line: -5 -4 -3 -2 -1 0 1 2 3 4 5

Negative integers are numbers less than zero. They are written with a – sign.
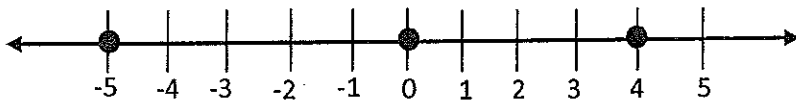
Zero is neither negative nor positive.

Positive integers are numbers greater than zero. They can be written with or without a + sign.

Write an integer for each situation.

An average temperature of 5 degrees <u>below</u> normal -5

An average rainfall of 5 ~~degrees~~ inches above normal $+5 \text{ or } 5$

Graphing Integers
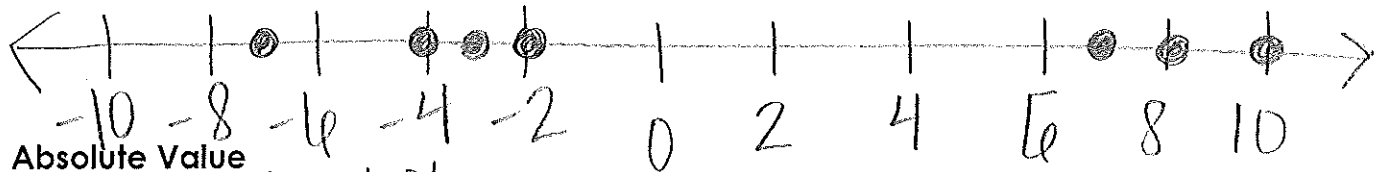

Graph integers {4, -5, 0} on the number line.

Draw a number line and *graph* the following integers on a number line.
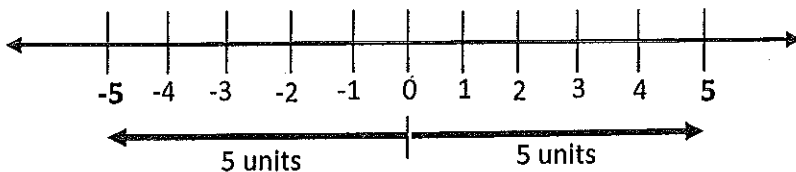
{-2, 8, -7}   {-4, 10, -3, 7}

-10 -8 -6 -4 -2 0 2 4 6 8 10

Absolute Value
+grouping symbol

Absolute value is the distance a number is from zero on a number line.

-5 -4 -3 -2 -1 0 1 2 3 4 5

5 units   5 units

The absolute value of -5 and 5 are the same.

$|-5| = 5 \quad |5| = 5$

Find the absolute value of the following.

| -4 |

$\textcircled{4}$.

$\rightarrow$ **Let's Practice!!!**

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| -5 | - | 2 |

5 $\ominus$ 2

$\textcircled{3}$

| 2 | + | -3 |

2 + 3

$\textcircled{5}$

Write an integer to represent the situation.
1. A loss of 11 yards   2. 6°F below zero   3. A deposit of $7

4. 250 meters above sea level   5. An elevator goes up 8 floors

Graph each set of integers on a number line.
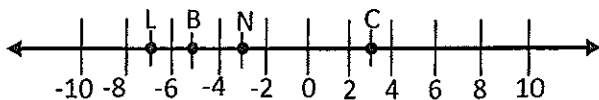6. {11, -5, -8}   7. {2, -1, -9, 1}

Evaluate each expression.
8. | -9 | 9. 1 + | 7 | 10. | -6 | - | 1 |

Which point is located at -3 on the number line?	Which statement about these real-world situations is NOT true?
A number line labeled -10 -8 -6 -4 -2 0 2 4 6 8 10 with points L, B, N between -8 and -2, and C near 4. A Point B B Point C C Point L D Point N	F A $100 check deposited in a bank can be represented by +100. G A loss of 15 yards in a football game can be represented by -15. H A temperature of 20 below zero can be represented by -20. J A submarine diving 300 feet under water can be represented by +300.

Write about a real-world situation that uses negative integers. Explain what the negative integer means in that situation. Write in complete sentences.