Name: _____ Date: _____

Aim: What do we know about integers?

# DO NOW:

Assuming that *a* and *b* are the same distance from zero, what assumptions can you make about *a* and *b*? List as many as you can.


Which of these numbers is closer to zero?


**Absolute Value:** _____

_____

Evaluate each expression.

| 1.) $\lvert -3 \rvert$ | 2.) $\lvert 8.2 \rvert$ | 3.) $\lvert -\frac{1}{2} \rvert$ | 4.) $-\lvert 10 \rvert$ | 5.) $-\lvert -12 \rvert$ |
|---|---|---|---|---|
| | | | | |

# Addition

**SAME SIGNS SUM** (& keep sign)

**DIFFERENT SIGNS DIFFERENCE** (& keep sign of integer with larger absolute value)

**Find the sum**

| | | | |
|---|---|---|---|
| 1) 3 + 2 | 2) -4 + 5 | 3) -6 + 2 | 4) -8 + (-6) |
| 5) -1 + (-3) | 6) -12 + 7 | 7) 5 + (-6) | 8) 13 + (-12) |

**State whether the following is ALWAYS, SOMETIMES, or NEVER true.**

9) When adding two integers with the same sign, the sum will be positive.

10) The sum of two integers with different signs is negative.

11) The sum of two opposites is zero.

12) The sum of two negative integers is positive.

13) The sum of a positive and a negative integer is greater than the positive integer.

**Subtraction is the same as** _____.

**Subtraction:** _____ _____ _____ **(& follow rules for addition)**

**Find the difference**

| | | |
|---|---|---|
| 14) -6 -7 | 15) 7 - 15 | 16) -8 - (-3) |
| 17) 10 - (-18) | 18) 51 - 82 | 19) -24 - (-11) - 30 |

20) The variables $a$ and $b$ are integers. Tell whether the value of the expression **b - a** is positive, negative or could be either if $b < a$.

Discussion Questions

1) If $a$ is a real number, then $-a$ is always a negative number.

2) If $a$ is a negative number, then $-a$ is always a positive number.

3) The opposite of a number is always a different number.

4) If $x$ is a positive number, then $x$ is greater than its opposite.

5) The opposite of the opposite of a number is that number itself.


**The two ways to remember the addition of integers are:**

- _____
- _____

**When subtracting integers we must:**

- _____