

**Content and Language Objective:**

**Students will evaluate a variety of situations using absolute value expressions and addition and subtraction operations using real numbers and be able to explain in their own words what the absolute value operation is.**

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**Warm-Up**

**1. Thinking back to last week, be prepared to discuss the types of categories used when classifying numbers and one example of each.**

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#### **Terms:**

- **Real Number Line**
- **Origin**
- **Less/Greater Than**
- **Positive/Negative Number**
- **Absolute Value**
- **Addends/Sum**
- **Additive Inverse**

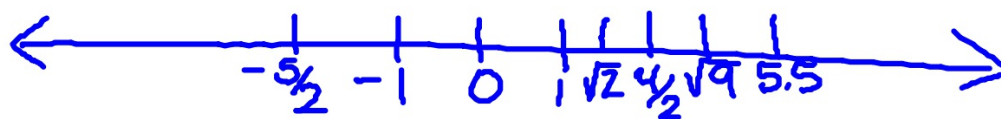
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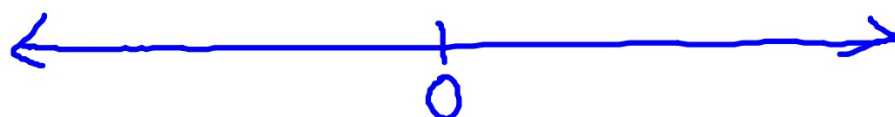
- **Real Number Line**

A visual representation of the real number system where each real number corresponds to a point on the line.



- **Origin**

The point associated with the real number 0



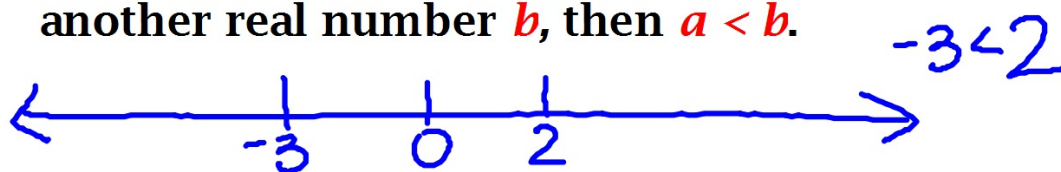
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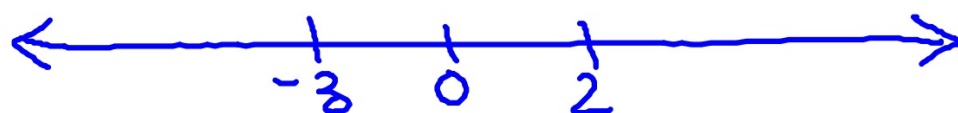
- **Less Than**

If a real number  $a$  is located to the left of another real number  $b$ , then  $a < b$ .



- **Greater Than**

If a real number  $a$  is located to the right of another real number  $b$ , then  $a > b$ .



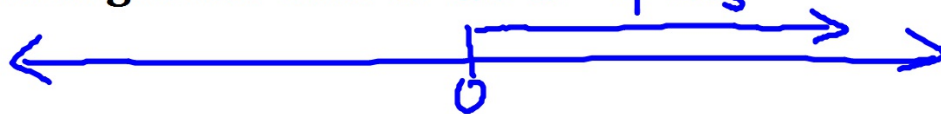
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#### Terms:

- **Positive Numbers**

A real number that is located to the right of 0 and greater than 0.  $a > 0$   $+ \#$ 's



- **Negative Numbers**

A real number that is located to the left of 0 and is less than 0.  $a < 0$



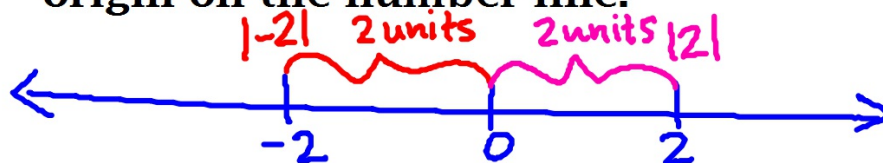
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#### Terms:

- **Absolute Value**

Written as  $|a|$ , is equal to the distance from the origin on the number line.



Evaluate each expression.

1.  $|9.12| = 9.12$

2.  $|- \frac{3}{4}| = \frac{3}{4}$

3.  $|- \pi| = \pi$

4.  $|- 7| = 7$

5.  $|- 10| - |- 8|$

$10 - 8$

$(2)$

$-|- 12| = -12$



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#### Terms:

- **Addend**  
Two numbers added together in an addition problem. The answer is the **sum**.

3 + 5 = 8

Diagram illustrating the components of an addition problem:

- The numbers 3 and 5 are grouped by a bracket and labeled "Addends".
- The result 8 is grouped by a bracket and labeled "Sum".

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#### Terms:

- **Additive Inverse (Opposite)**

The additive inverse is the opposite of the addend.

Example:

The additive inverse of 5 is -5.

The additive inverse of -1.5 is -(-1.5) or 1.5.

When you add the addend and additive inverse the solution will be 0.

$$a + (-a) = 0$$



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**Practice:** What are the additive inverses of the following?

1.  $10,961$       $-10,961$

2.  $6x - 2$       $-6x + 2$       $-(6x - 2)$

3.  $\pi$       $-\pi$

4.  $-\frac{3}{4}$       $\frac{3}{4}$

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**Practice:** Evaluate the expressions.

1.  $-3 + (-5) = -8$

2.  $-4 + 7 = 3$

3.  $8.4 + (-9.5)$

$-1.1$

