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# Absolute Value

## Absolute Value

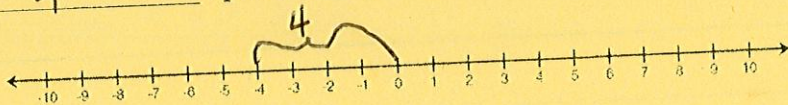
Absolute value is used to describe the distance a number is from zero.

The notation we use to show absolute value is a pair of absolute value bars. Draw these below.

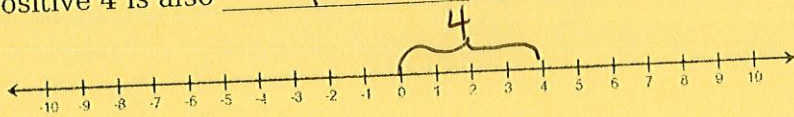
To read the expression  $|-4|$  you would say,

"the absolute value of negative four"

Looking at the number line below, we can see that -4 is 4 spaces away from zero.



Positive 4 is also 4 spaces away from zero.



$$\text{So, } |-4| = 4 \quad \text{AND} \quad |4| = 4$$

Because absolute value refers to distance on a number line, it is always a non-negative.

# Absolute Value

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What is the absolute value of each number?

$$|12| = 12$$

$$|-15| = 15$$

$$|-2.5| = 2.5$$

$$|5-2| = 3$$

$$|3+7| = 10$$

$$|9-3| = 6$$

Evaluate the following using your knowledge of Absolute Value.

$$|2| - |2|$$
$$2 - 2 = \boxed{0}$$

$$|16-2|$$
$$|14| = \boxed{14}$$

$$|-8| - |-8|$$
$$8 - 8 = \boxed{0}$$

$$|7-6|$$
$$|1| = \boxed{1}$$

$$|-8| + |-7|$$
$$8 + 7 = \boxed{15}$$

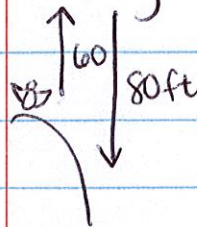
$$|-21| - |9|$$
$$21 - 9 = \boxed{12}$$

$$|15| + |19|$$
$$15 + 19 = \boxed{34}$$

$$|14+7|$$
$$|21| = \boxed{21}$$

$$|-16| - |8+3|$$
$$16 - 11 = \boxed{5}$$

An eagle leaves her nest on the side of a cliff. She soars upward 60ft and then dives 80ft. What is her change in elevation after leaving the nest?



She is 20 feet below where she started.