Absolute Value:

Distance from zero on a number line.

Absolute value of a number gives a positive result because DISTANCE IS ALWAYS A POSITIVE QUANTITY.

Symbol for Absolute Value: $|x|$

"The Absolute Value of x"

$$|x| = \begin{cases} x \text{ if } x \geq 0 \\ -x \text{ if } x < 0 \end{cases}$$

The absolute value of a number is itself if the number is zero or positive

The absolute value of a number is the opposite if the number is negative.

Simplify each.

1. $|-6| = 6$

2. $|13| = 13$

3. $5 + |-3 + 7| = 5 + 4 = 9$

4. $4 - |-2| = 4 - 2 = 2$

Absolute Value is a grouping symbol like parentheses. You must simplify inside before doing the absolute value.

Absolute Value is also a math operation

Evaluate each expression for E = -4 F = 6 G = -2

1. $-G + |E| - |F|$

$= -(-2) + |-4| - |6|$

$= 2 + 4 - 6$

$= 6 - 6$

$= 0$

2. $-3|G| + E^2$

$= -3|-2| + (-4)^2$

$= -3 \cdot 2 - 6 + 16$

$= 10$

3. $|FG| - |E+G|$

$= |6 \cdot (-2)| - |-4 + 2|$

$= |-12| - |-6|$

$= 12 - 6$

$= 6$

4. $|E| - 5|F|$

$= |-4| - 5|6|$

$= 4 - 5 \cdot 6$

$= 4 - 30$

$= 4 - 30$

$= -26$

Conjecture: A guess based on many observations.

(an educated guess)

Every morning I've come to work there has been
a puddle on the sidewalk.

My conjecture could be: It has rained every night.