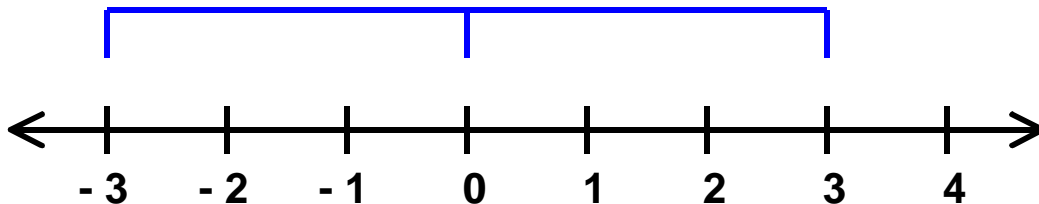


# Absolute Value

Look at the number line below. What do you notice about the 3 and the  $-3$ ?



They are each 3 units from 0.

Although they have different directions, their distances from 0 are the same.

**Absolute value is the distance from a number to 0.**

We show absolute value with two vertical lines.

$|3| = 3$  reads as,

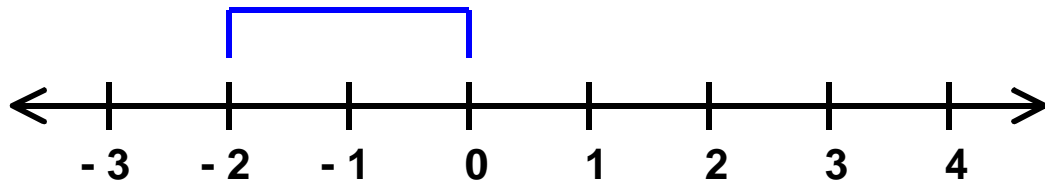
“The absolute value of 3 is 3.”

$|-3| = 3$  reads as,

“The absolute value of negative 3 is 3.”

### Example 1:

Simplify  $|-2|$ .



Since  $-2$  is a distance of 2 from 0,

$$|-2| = 2$$

### Example 2:

Simplify  $|160|$ .

You could use a number line, but if you just think about it, 160 is 160 from 0. Therefore,

$$|160| = 160$$

Absolute Value is easy and fun!

The absolute value lines  $| \quad |$  work like parentheses. You do any operations that are inside FIRST.

### Example 3:

Simplify  $| 10 - 2 |$ .

First, do what is inside the absolute value lines.

$$| 10 - 2 | = | 8 | = 8$$

$$| 10 - 2 | = 8$$

### Example 4:

Simplify  $- | - 7 |$ .

First, do what is inside of the absolute value lines.

$$- | - 7 | = - | - 7 |$$

Since the absolute value of  $- 7$  is 7,

$$- | - 7 | = - 7$$

$$= - 7$$