"I Can Explain how the Absolute Value of a number relates its Distance from 0."

"I Can Explain how the Absolute Value of a number is used in Real-World Situations to show Magnitude."

Absolute Value

The **absolute value** of a number is its distance from 0 on the number line. Since absolute value is a distance, an absolute value is never negative. The symbol for the absolute value of a number n is $|n|$

Example

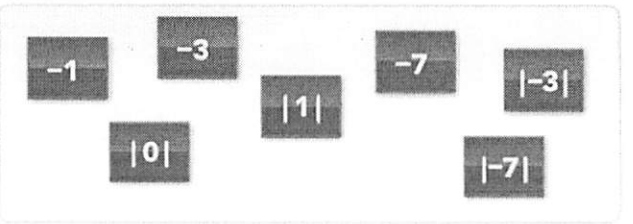
Find each absolute value.

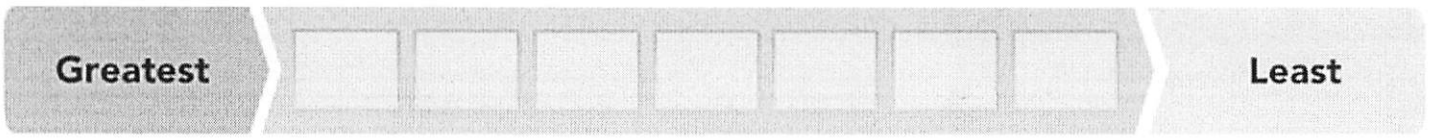
a. $|9|$ **b.** $|-3|$ **c.** $|0|$ **d.** $\left|-\frac{2}{7}\right|$

e. $-|27|$ **f.** $-|-27|$ **g.** $|-27|$

Example

Order the values from greatest to least.





Got It?

Order the values from least to greatest:

$|-5|,\ -5,\ |2|,\ -2,\ -|3|,\ |-3|$

Example

Compare each pair.

a. $|1.25| \square \left|1\frac{1}{2}\right|$

b. $\left|-\frac{1}{3}\right| \square |-0.67|$

c. $\left|1\frac{1}{2}\right| \square \left|-1\frac{1}{2}\right|$

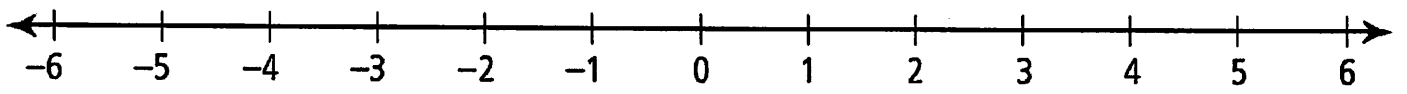
d. $\left|-1\frac{1}{2}\right| \square |-1.8|$

e. $\left|\frac{1}{2}\right| \square \left|-\frac{1}{3}\right|$

f. $|-1.8| \square |0|$

Plot the following rational numbers on the number line.

$$-1.4,\ \frac{5}{2},\ \left|-3\frac{1}{2}\right|,\ 4.065,\ \frac{9}{10},\ 1\frac{2}{3},\ -|0.25|,\ -\frac{20}{4}$$



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Absolute Value

The **absolute value** of a number is its distance from 0 on the number line. Since absolute value is a distance, an absolute value is never negative. The symbol for the absolute value of a number n is $|n|$

Example

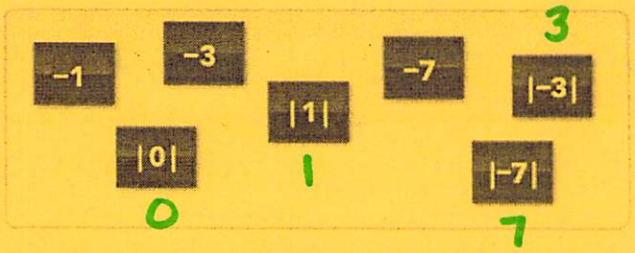
Find each absolute value.

a. $|9|$ 9 **b.** $|-3|$ 3 **c.** $|0|$ 0 **d.** $\left|-\frac{2}{7}\right|$ $\frac{2}{7}$

e. $-|27|$ -27 **f.** $-|-27|$ -27 **g.** $|-27|$ 27

Example

Order the values from greatest to least.



Greatest |-7| |-3| |1| |0| -1 -3 -7 **Least**

Got It?

Order the values from least to greatest:

$|-5|$, -5, $|2|$, -2, $-|3|$, $|-3|$

5, -5, 2, -2, -3, 3

-5, -|3|, -2, |2|, |-3|, |-5|

Example

Compare each pair.

a. $|1.25| < \left|1\frac{1}{2}\right|$ (1.25 < 1.5)

b. $\left|-\frac{1}{3}\right| < |-0.67|$ (0.33 < 0.67)

c. $\left|1\frac{1}{2}\right| = \left|-1\frac{1}{2}\right|$ (1.5 = 1.5)

d. $\left|-1\frac{1}{2}\right| < |-1.8|$ (1.5 < 1.8)

e. $\left|\frac{1}{2}\right| > \left|-\frac{1}{3}\right|$ (0.5 > 0.33)

f. $|-1.8| > |0|$ (1.8 > 0)

Plot the following rational numbers on the number line.

$$-1.4,\ \frac{5}{2},\ \left|-3\frac{1}{2}\right|,\ 4.065,\ \frac{9}{10},\ 1\frac{2}{3},\ -|0.25|,\ -\frac{20}{4}$$

$\frac{5}{2} = 2\frac{1}{2}$, $\left|-3\frac{1}{2}\right| = 3\frac{1}{2}$, $-|0.25| = -0.25$, $-\frac{20}{4} = -5$