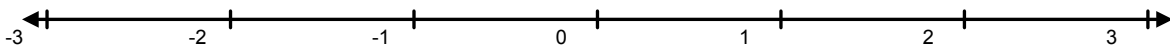


7.1 Absolute Value

Suppose you and your friend each live 2 km from your school, but in opposite directions. You could represent these distances as 2 km in one direction and -2 km in the other direction. However, you would both say that you live 2 km from your school.

The **ABSOLUTE VALUE** of the distance each of you lives from your school is 2 km.

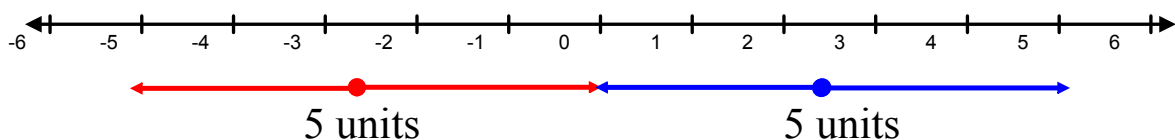


When you consider "HOW FAR" not "IN WHAT DIRECTION", we are discussing the "ABSOLUTE VALUE".

The Absolute Value, $|a|$ is the distance a number is from zero on a real-number line.

$$|-5| = 5$$

$$|+5| = 5$$



In general, the absolute value of a real number a is defined as:

$$|a| = \begin{cases} a, & \text{if } a \geq 0 \\ -a, & \text{if } a < 0 \end{cases}$$

Example 1

Determining the Absolute Value of a Number

Evaluate the following.

a) $|3|$

b) $|0|$

c) $|-7|$

d) $|9|$

e) $|-12|$

Example 2

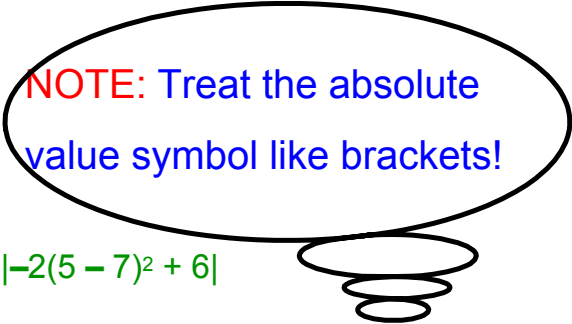
Evaluating Absolute Value Expressions

Evaluate the following.

a) $|4| - |-6|$

b) $5 - 3|2 - 7|$

c) $|-2(5 - 7)^2 + 6|$



NOTE: Treat the absolute value symbol like brackets!

Key Ideas p. 363

Assign p. 363, #1, 2, 4, 6, 9