## Definition of the Distance Between Points on a Real Number Line

If $a$ and $b$ are the coordinates of two points on a real number line, the **distance** between the graph of $a$ and the graph of $b$, denoted by $d(a, b)$, is given by $d(a, b) = |a - b|$.

**EXAMPLE**

Find the distance between a point whose coordinate on the real number line is $-2$ and a point whose coordinate is 5.

$$d(-2, 5) = |-2 - 5| = |-7| = 7$$

Note in Figure P.12 that there are 7 units between $-2$ and 5. Also note that the order of the coordinates in the formula does not matter.

$$d(5, -2) = |5 - (-2)| = |7| = 7$$