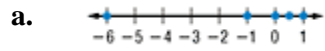


Lesson 2-1

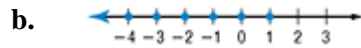
Example 1 Identify Coordinates on a number line.

Name the coordinates of the points graphed on each number line.



The dots indicate each point on the graph.

The coordinates are $\{-6, -1, 0, \frac{1}{2}, 1\}$

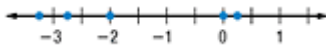


The bold arrow on the left means that the graph continues indefinitely in that direction. The coordinates are $\{\dots, -2, -1, 0, 1\}$

Example 2 Graph Numbers on a Number Line

Graph each set of numbers.

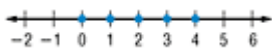
a. $\{\frac{-10}{3}, \frac{-8}{3}, -2, 0, \frac{1}{3}\}$



b. $\{-6, -3, 0, 3, 6, \dots\}$



c. $\{\text{integers less than 5 and greater than } -1\}$



Example 3 Absolute Value of Rational Numbers

Find each absolute value.

a. $|\frac{-2}{3}|$

$\frac{-2}{3}$ is two thirds of a unit away from zero in the negative direction.

$$|\frac{-2}{3}| = \frac{2}{3}$$

b. $|5.6|$

5.6 is five and six tenths units from zero in the positive direction.

$$|5.6| = 5.6$$

Example 4 Expressions with Absolute Value

Evaluate $\left|\frac{2}{3} - x\right| + 4$ if $x = \frac{1}{2}$.

$$\begin{aligned}\left|\frac{2}{3} - x\right| + 4 &= \left|\frac{2}{3} - \frac{1}{2}\right| + 4 && \text{Replace } x \text{ with } \frac{1}{2}. \\ &= \left|\frac{1}{6}\right| + 4 && \frac{2}{3} - \frac{1}{2} = \frac{1}{6} \\ &= \frac{1}{6} + 4 && \left|\frac{1}{6}\right| = \frac{1}{6} \\ &= 4\frac{1}{6} && \text{Simplify.}\end{aligned}$$