EXAMPLE 4 **Graph an equation in standard form**

Graph $5x + 2y = 10$.

Solution

STEP 1 The equation is already in standard form.

STEP 2 **Identify** the x-intercept.

$5x + 2(\mathbf{0}) = 10$ **Let $y = 0$.**

$x = 2$ **Solve for x.**

The x-intercept is 2. So, plot the point $(2, 0)$.

STEP 3 **Identify** the y-intercept.

$5(\mathbf{0}) + 2y = 10$ **Let $x = 0$.**

$y = 5$ **Solve for y.**

The y-intercept is 5. So, plot the point $(0, 5)$.

STEP 4 **Draw** a line through the two points.
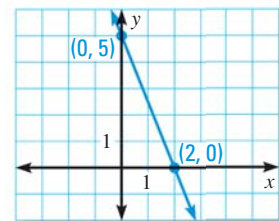
HORIZONTAL AND VERTICAL LINES The equation of a vertical line cannot be written in slope-intercept form because the slope is not defined. However, every linear equation—even that of a vertical line—can be written in standard form.

KEY CONCEPT *For Your Notebook*

Horizontal and Vertical Lines

Horizontal Lines The graph of $y = c$ is the horizontal line through $(0, c)$.

Vertical Lines The graph of $x = c$ is the vertical line through $(c, 0)$.

EXAMPLE 5 **Graph horizontal and vertical lines**

Graph (a) $y = 2$ and (b) $x = -3$.

Solution

a. The graph of $y = 2$ is the horizontal line that passes through the point $(0, 2)$. Notice that every point on the line has a y-coordinate of 2.

b. The graph of $x = -3$ is the vertical line that passes through the point $(-3, 0)$. Notice that every point on the line has an x-coordinate of -3.
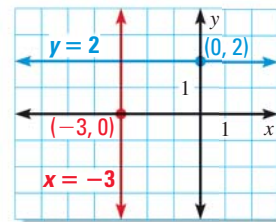
✓ **GUIDED PRACTICE** for Examples 4 and 5

Graph the equation.

11. $2x + 5y = 10$ **12.** $3x - 2y = 12$ **13.** $x = 1$ **14.** $y = -4$