

## **Graphing Linear Equations Using the Slope-Intercept Form** (page 1)

A linear equation of the form y = mx + b is said to be in slope-intercept form. The slope is m and the y-intercept is b. This form can make graphing a linear equation easy.

Procedure:

- 1. Rewrite (as necessary) original equation in function form.
- 2. Identify m as slope and b as y-intercept.

Example: Identify the slope and the y-intercept for the given equation

(a) 
$$y = x - 2$$

$$y = x-2$$
 original equation  
 $y = 1x + (-2)$  rewrite  
slope is 1 and  
 $y$ -intercept is  $-2$  identify

(b) 
$$2x + 3y = 9$$

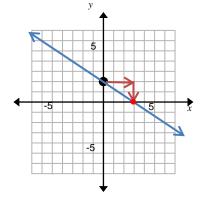
$$2x+3y=9$$
 original equation  

$$3y=-2x+9$$
 subtract 2x from both sides  

$$y=-\frac{2}{3}x+3$$
 divide both sides by 3  
slope is  $-\frac{2}{3}$  and the y-intercept is 3

Procedure/Example: Graph  $y = -\frac{2}{3}x + 2$ 

- 1. Identify the y-intercept (2) and plot the point (0, 2).
- 2. Identify the slope.  $-\frac{2}{3} = \frac{-2}{3}$  Starting at (0, 2), move 3 units to the right (since 3 is +) and 2 units down (since 2 is negative)—plot another point.
- 3. Draw a line through the two points.

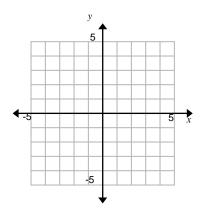


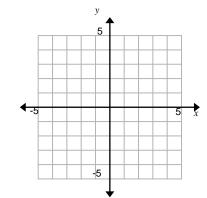
Identify the slope and y-intercept for the following equations. Graph.

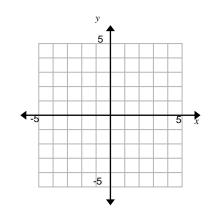
1. 
$$y = 2x + 3$$

**2.** 
$$y = x - 3$$

**3.** 
$$y = -2x + 4$$





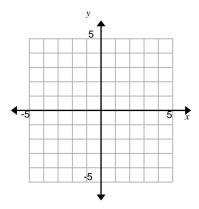


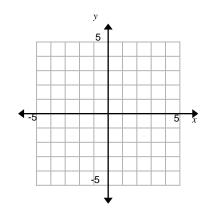
## **Graphing Linear Equations Using the Slope-Intercept Form** (page 2)

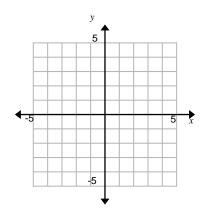
**4.** 
$$x + 2y = 6$$

**5.** 
$$6x - 3y = 12$$

**6.** 
$$-3x + 4y = 4$$



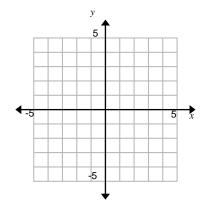


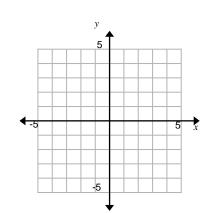


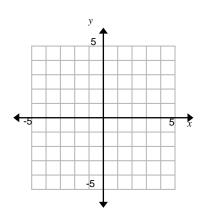
**7.** 
$$3x - y = -4$$

8. 
$$3x-4y=2$$

**9**. 
$$x - y = -3$$







**10.** 
$$2x + 3y = 0$$

