

Name: *Key*

Date:

Topic:

Class:

Main Ideas/Questions

Notes/Examples

### Standard Form

Linear equations are also frequently written in **standard form**:

$$Ax + By = C$$

We will convert these equations to **slope-intercept form** in order to graph. To do this, you must solve the equation for  $y$ .

### Steps to Convert

- 1 Add or Subtract the  $Ax$  to the other side
- 2 Then divide or multiply by the  $B$  value

### Examples

**Directions:** Rewrite each equation in slope-intercept form.

1.  $x + y = -2$   
 $\begin{array}{r} x + y = -2 \\ -x \quad -x \\ \hline y = -x - 2 \end{array}$

2.  $-4x + y = 5$   
 $\begin{array}{r} -4x + y = 5 \\ +4x \quad +4x \\ \hline y = 4x + 5 \end{array}$

3.  $5x + 6y = 12$   
 $\begin{array}{r} 5x + 6y = 12 \\ -5x \quad -5x \\ \hline 6y = -5x + 12 \\ \frac{6y}{6} = \frac{-5x}{6} + \frac{12}{6} \\ y = -\frac{5}{6}x + 2 \end{array}$

4.  $-2x + 6y = -24$   
 $\begin{array}{r} -2x + 6y = -24 \\ +2x \quad +2x \\ \hline 6y = 2x - 24 \\ \frac{6y}{6} = \frac{2x}{6} - \frac{24}{6} \\ y = \frac{1}{3}x - 4 \end{array}$

5.  $3x - 5y = 5$   
 $\begin{array}{r} 3x - 5y = 5 \\ -3x \quad -3x \\ \hline -5y = -3x + 5 \\ \frac{-5y}{-5} = \frac{-3x}{-5} + \frac{5}{-5} \\ y = \frac{3}{5}x - 1 \end{array}$

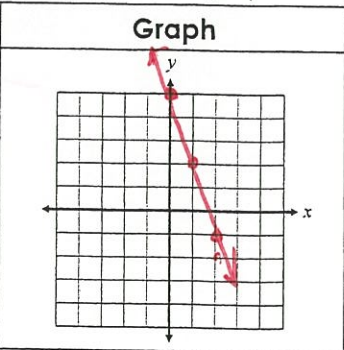
6.  $x - 2y = 16$   
 $\begin{array}{r} x - 2y = 16 \\ -x \quad -x \\ \hline -2y = -x + 16 \\ \frac{-2y}{-2} = \frac{-x}{-2} + \frac{16}{-2} \\ y = \frac{1}{2}x - 8 \end{array}$

### Graphing Practice

**Directions:** Rewrite each equation in slope-intercept form, then graph.

**Convert**

8.  $3x + y = 5$   
 $\begin{array}{r} 3x + y = 5 \\ -3x \quad -3x \\ \hline y = -3x + 5 \end{array}$ 
 $m = -3$   
 $b = 5$

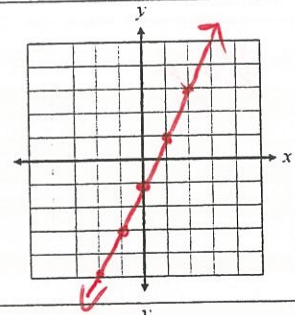


$$9. -2x + y = -1$$

$$\begin{array}{r} +2x \quad +2x \\ \hline y = 2x - 1 \end{array}$$

$$m = 2$$

$$b = -1$$



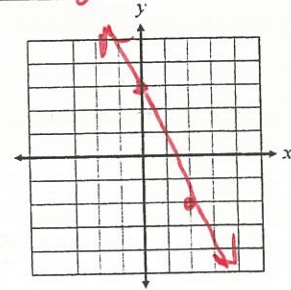
$$10. 5x + 2y = 6$$

$$\begin{array}{r} -5x \quad -5x \\ \hline 2y = -5x + 6 \\ \frac{2y}{2} = \frac{-5x}{2} + \frac{6}{2} \end{array}$$

$$m = -\frac{5}{2}$$

$$y = -\frac{5}{2}x + 3$$

$$b = 3$$



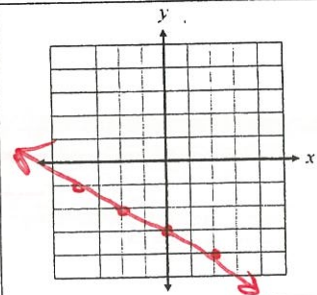
$$11. x + 2y = -6$$

$$\begin{array}{r} -x \quad -x \\ \hline 2y = -x - 6 \\ \frac{2y}{2} = \frac{-x}{2} - \frac{6}{2} \end{array}$$

$$m = -\frac{1}{2}$$

$$y = -\frac{1}{2}x - 3$$

$$b = -3$$



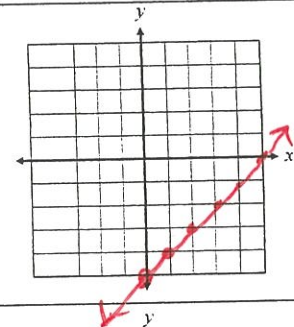
$$12. x - y = 5$$

$$\begin{array}{r} -x \quad -x \\ \hline -y = -x + 5 \\ \frac{-y}{-1} = \frac{-x}{-1} + \frac{5}{-1} \end{array}$$

$$m = 1$$

$$b = -5$$

$$y = x - 5$$



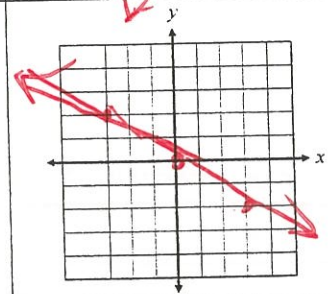
$$13. -8x - 12y = 0$$

$$\begin{array}{r} +8x \quad +8x \\ \hline -12y = 8x \\ \frac{-12y}{-12} = \frac{8x}{-12} \end{array}$$

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

$$b = 0$$

$$y = -\frac{2}{3}x$$



$$14. x - 4y = -4$$

$$\begin{array}{r} -x \quad -x \\ \hline -4y = -x - 4 \\ \frac{-4y}{-4} = \frac{-x}{-4} - \frac{4}{-4} \end{array}$$

$$m = \frac{1}{4}$$

$$b = 1$$

$$y = \frac{1}{4}x + 1$$

