

**5 - 2**

# **Slope and Direct Variation**



direct variation:  $y = kx$

k is the constant of variation

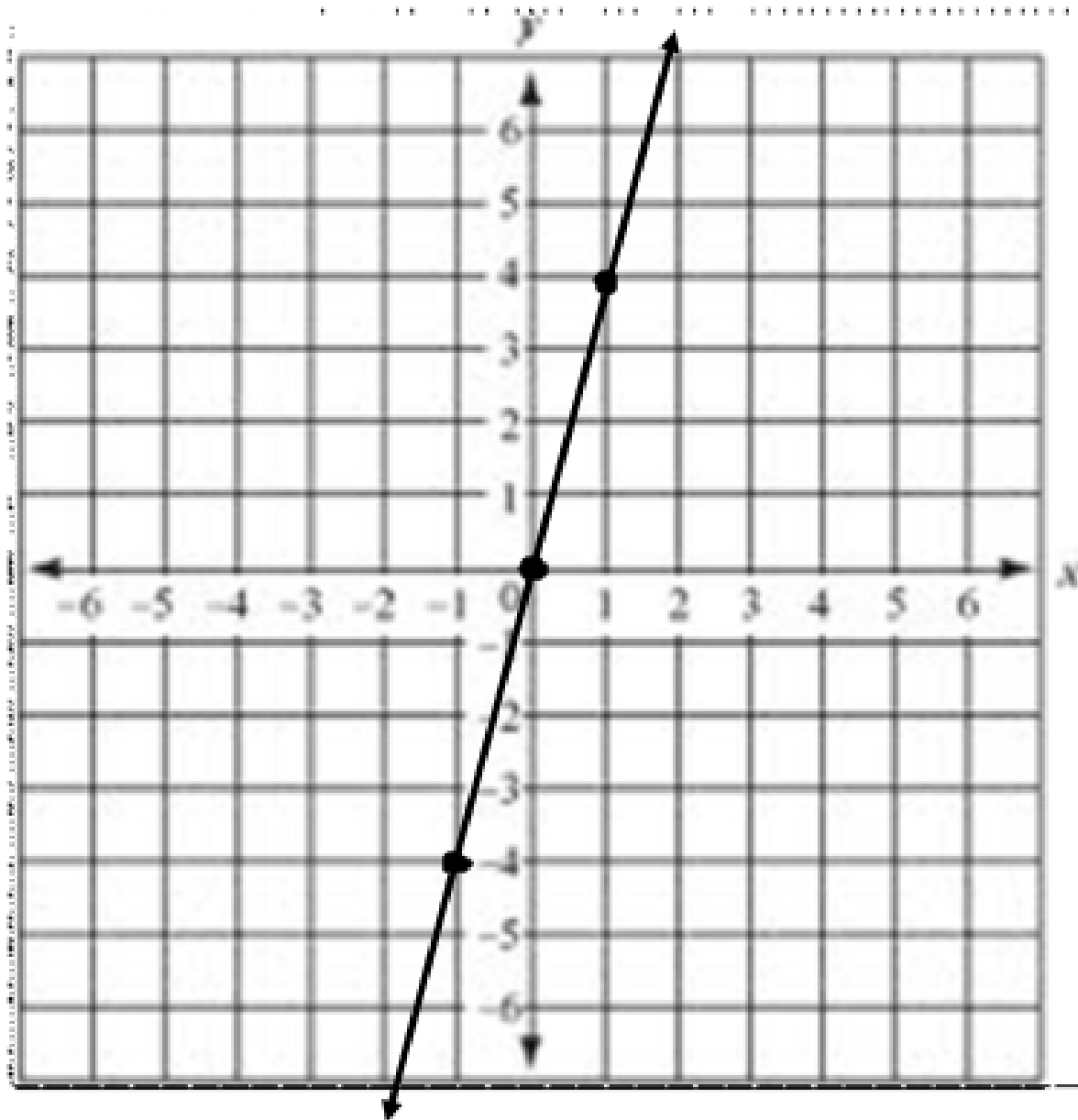
**Find the constant of variation of each of the following equations.**

**Ex:  $y = 3x$**       $(3)$

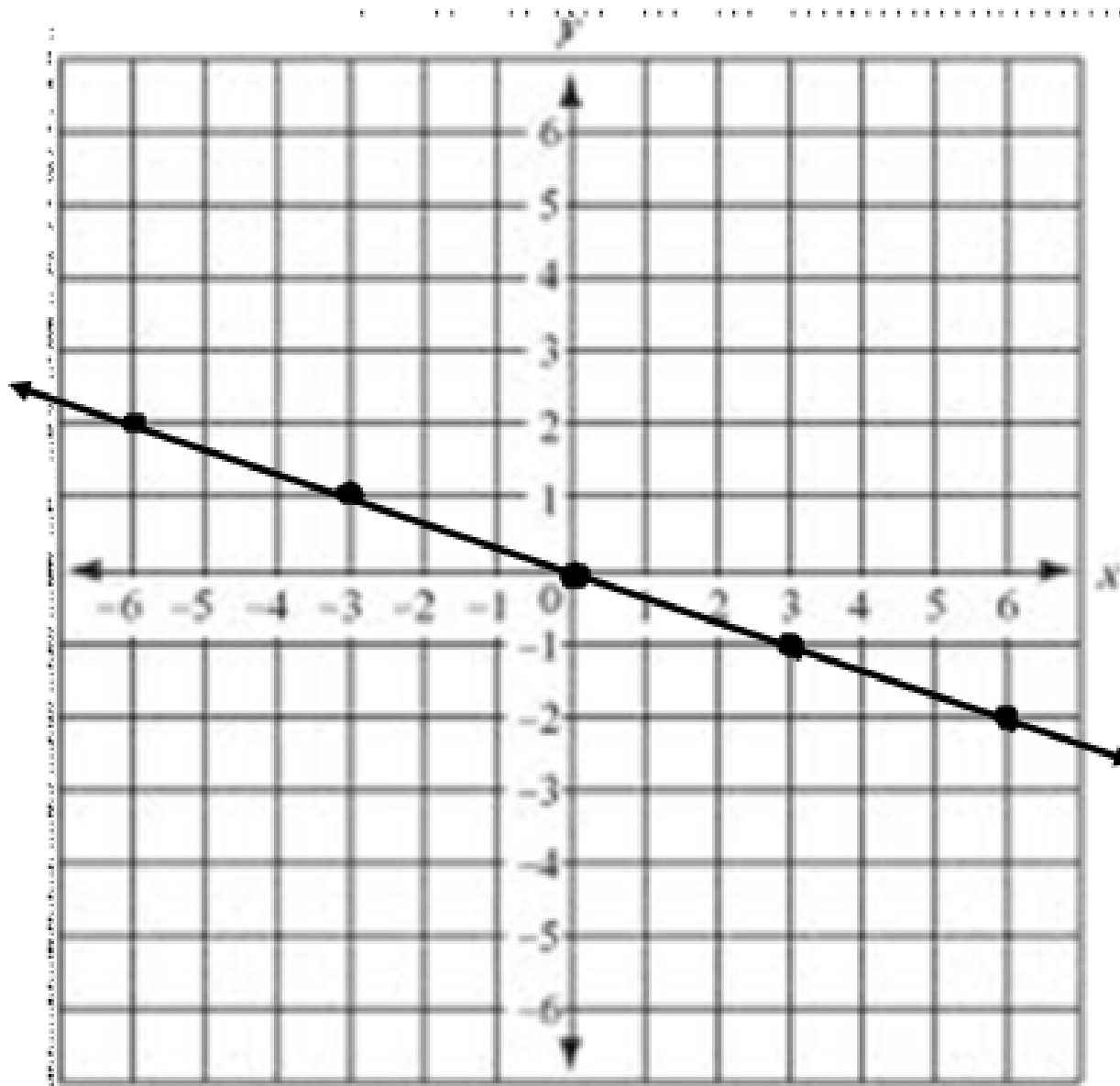
**Ex:  $y = -2x$**       $(-2)$

Ex: Graph  $y = 4x$ .

$$y = 4x + 0$$

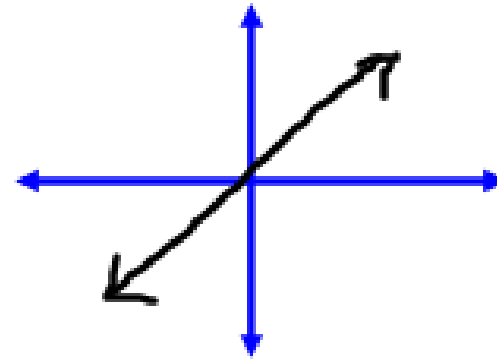


Ex: Graph  $y = -\frac{1}{3}x$ .



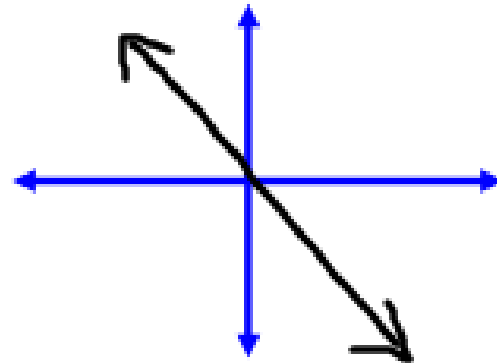
**Positive slope:**

$$k > 0$$



**Negative slope:**

$$k < 0$$



Suppose  $y$  varies directly as  $x$ , and  $y = 28$  when  $x = 7$ .

a.) Write a direct equation that relates  $x$  and  $y$ .

$$y = kx$$

$$28 = k \cdot 7$$

$$4 = k$$

$$y = 4x$$

b.) Use the direct variation equation to find  $x$  when  $y = 52$ .

$$y = 4x$$

$$52 = 4x$$

$$13 = x$$

Suppose  $y$  varies directly as  $x$ , and  $y = 9$  when  $x = -3$ .

a.) Write a direct equation that relates  $x$  and  $y$ .

$$y = kx$$

$$9 = k \cdot -3$$

$$-3 = k$$

$$y = -3x$$

b.) Use the direct variation equation to find  $x$  when  $y = 15$ .

$$15 = -3x$$

$$-5 = x$$





Homework:

p. 267 #4–14, 34, 36, 38