

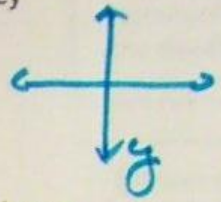
## Vocabulary

Choose the best term from the box to complete each definition.

- linear equation

  - ✓ parallel
  - ✓ slope
  - ✓ y-intercept

- The value of  $m$  in the equation  $y = mx + b$  represents the slope.
- When lines are the same distance apart over their entire lengths, they are parallel.
- The y-intercept is the value  $b$  in the equation  $y = mx + b$ .
- A linear equation is a relationship between two variables that gives a straight line when graphed.



## Identifying Slope and y-Intercept

$y = mx + b$

Identify the slope and the y-intercept of the equation.

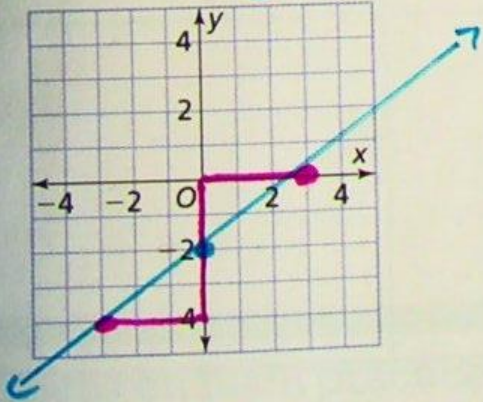
- $y = 2x + 3$   
 slope =  $2 = \frac{2}{1}$  (up 2, right 1)  
 y-intercept =  $3$
- $y = -0.5x + 2.5$   
 slope =  $-0.5 = -\frac{1}{2}$  (down 1, right 2)  
 y-intercept =  $2.5$
- $y - 1 = -x + 1$   
 $y = -x + 2$   
 slope =  $-1 = -\frac{1}{1}$  (down 1, right 1)  
 y-intercept =  $2$

## Graphing Linear Equations

Graph the equation.

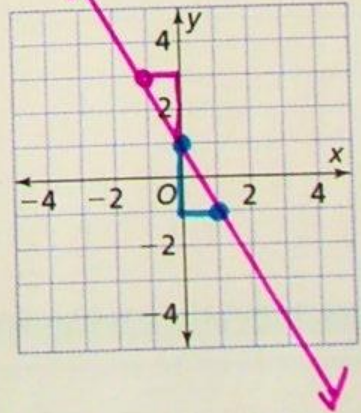
8.  $y = \frac{2}{3}x - 2$

$m = \frac{2}{3}$  (up 2, right 3)  
 $b = -2$



9.  $y = -2x + 1$   
 $-2$  (down 2)  
 $-3$  (left 3)

slope:  $-2 = -\frac{2}{1}$  (down 2, left 1)  
 y-int: 1



## Solving Equations for Variables

Solve the equation for y.

10.  $y - x = 5$

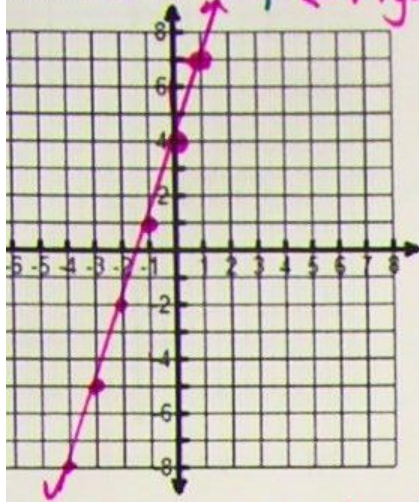
11.  $y + 0.2x = -4$

12.  $-\frac{2}{3}x + y = 8$

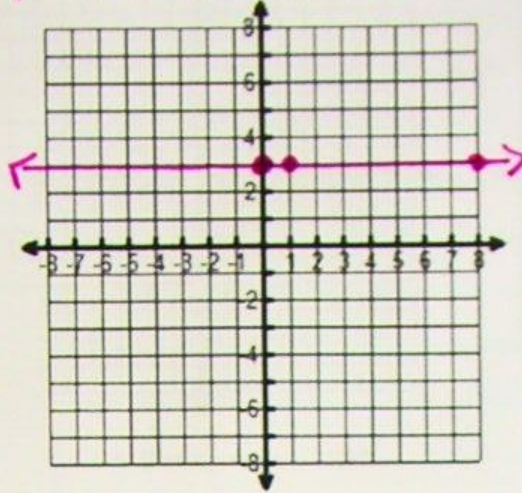
Graph the following lines using the y-intercept and slope.



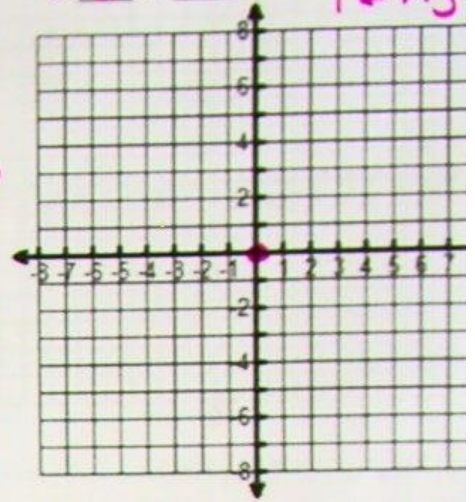
$y = 3x + 4$   
 y-intercept: 4 slope:  $\frac{3}{1}$   
*3 ← up 3*  
*1 ← right 1*



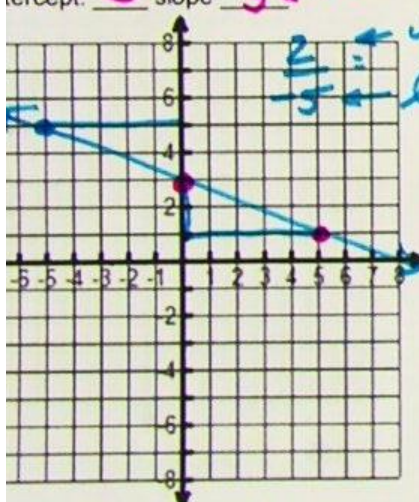
2)  $y = 3$   
 y-intercept: 3 slope: 0



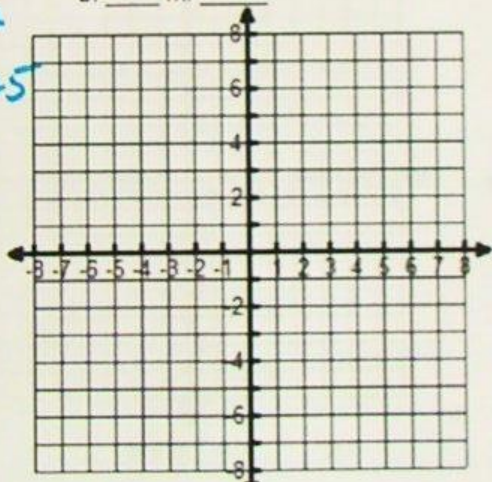
3)  $y = -2x + 0$   
 b: 0 m:  $-2 = \frac{-2}{1}$   
*-2 ← down 2*  
*1 ← right 1*



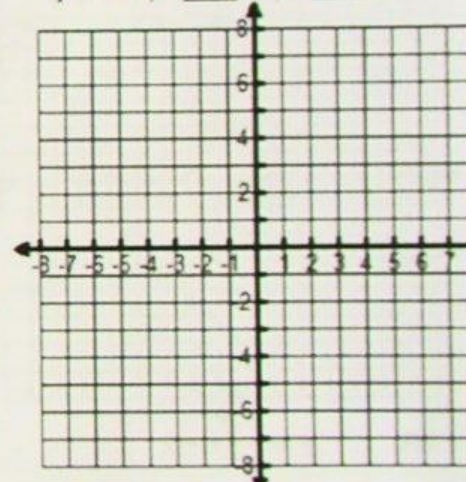
$y = -\frac{2}{5}x + 3$   
 y-intercept: 3 slope:  $-\frac{2}{5}$   
*-2 ← down 2*  
*5 ← right 5*



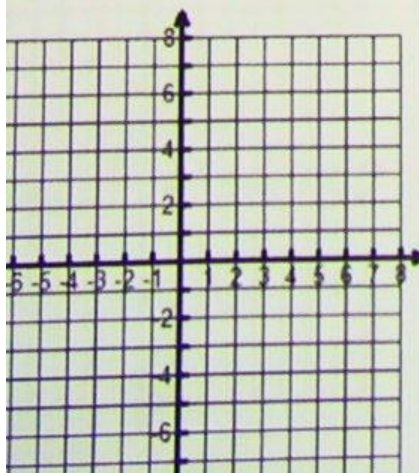
5)  $y = \frac{1}{2}x + 4$   
 b: \_\_\_\_\_ m: \_\_\_\_\_



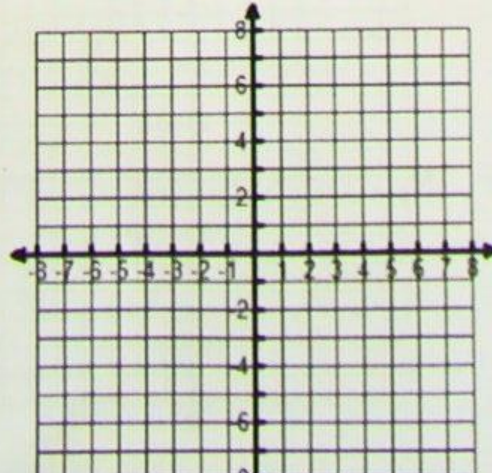
6)  $y = x - 4$   
 y-intercept: \_\_\_\_\_ slope: \_\_\_\_\_



$y = -\frac{1}{2}x + 3$   
 m: \_\_\_\_\_



8)  $y = \frac{1}{3}x - 4$   
 y-intercept: \_\_\_\_\_ slope: \_\_\_\_\_



9)  $y = -x + 3$   
 b: \_\_\_\_\_ m: \_\_\_\_\_

