Graphing Linear Equations – Slope

Graphs courtesy of "Graph": http://www.padowan.dk

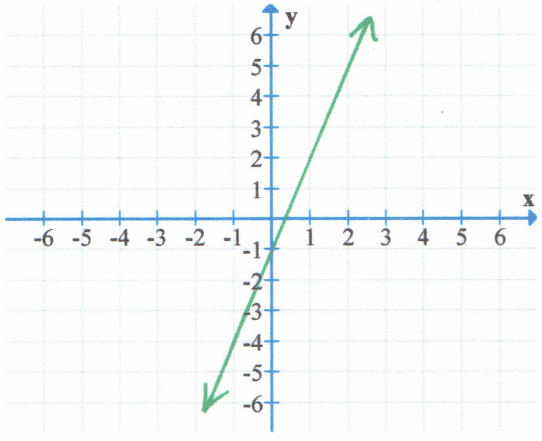
MrB4math.com

First write the correct slope under its graph. Then write the correct equation under its graph.

Slopes: $m = \frac{3}{4}$, $m = -\frac{5}{2}$, $m = 3$, $m = 0$, $m =$ undefined, $m = -2$

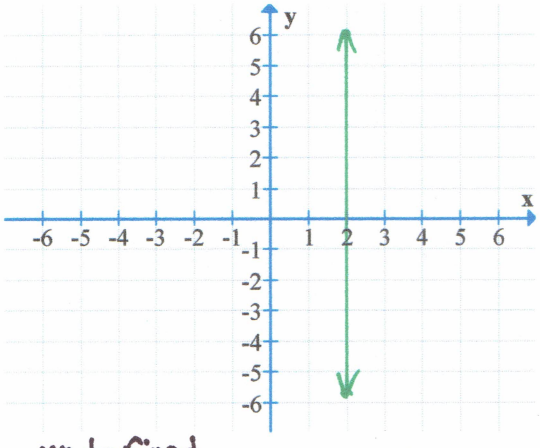
Equations: $y = -4$, $y = \frac{3}{4}x + 1$, $x = 2$, $y = -\frac{5}{2}x + 1$, $y = -2x + 3$, $y = 3x - 1$

1)



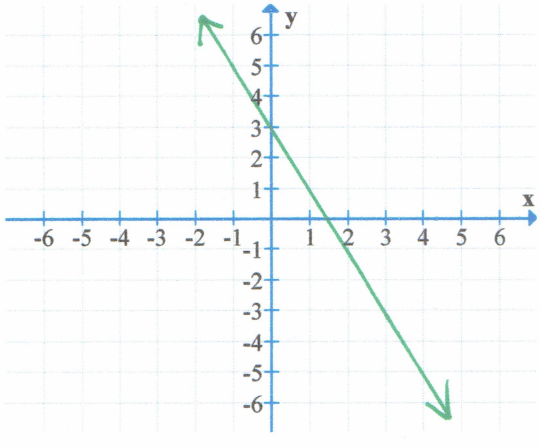
slope: m = 3 equation: $y = 3x - 1$

2)



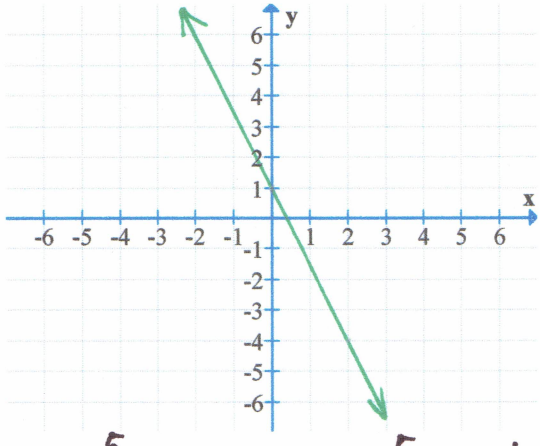
slope: m = undefined equation: $x = 2$

3)



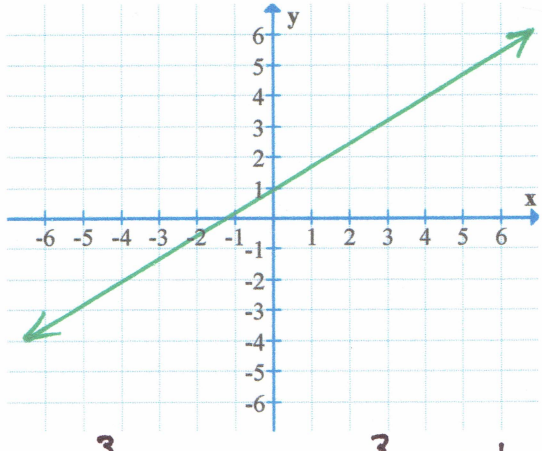
slope: m = -2 equation: $y = -2x + 3$

4)



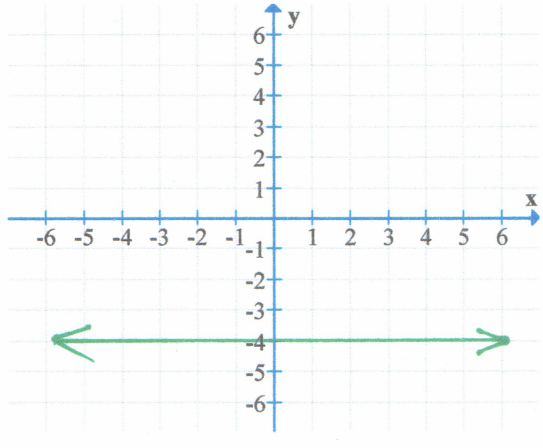
slope: m = $-\frac{5}{2}$ equation: $y = -\frac{5}{2}x + 1$

5)



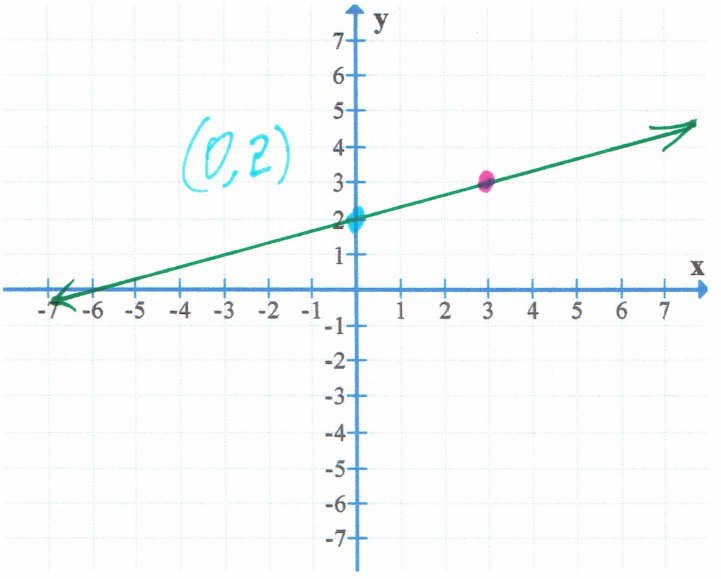
slope: m = $\frac{3}{4}$ equation: $y = \frac{3}{4}x + 1$

6)

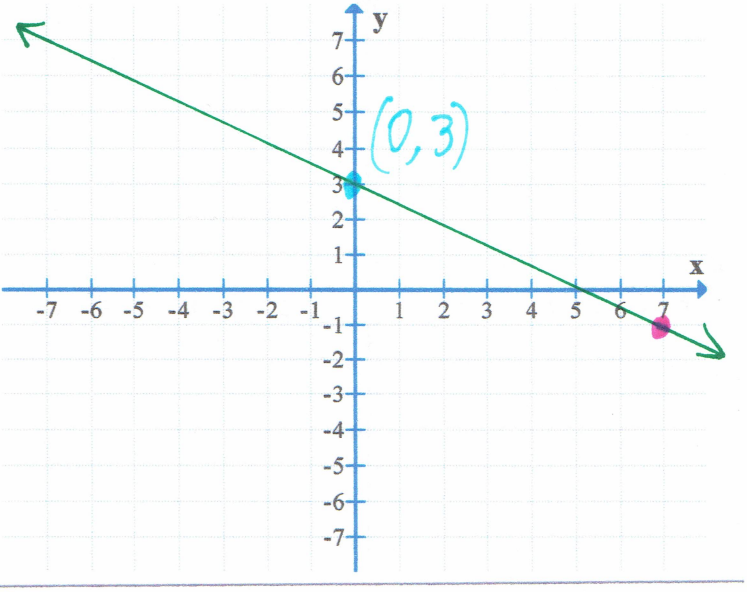


slope: m = 0 equation: $y = -4$

7) Graph the equation, without using an "x y table." $y = \frac{1}{3}x + 2$



8) Graph the equation without using an "x y table." $y = -\frac{4}{7}x + 3$



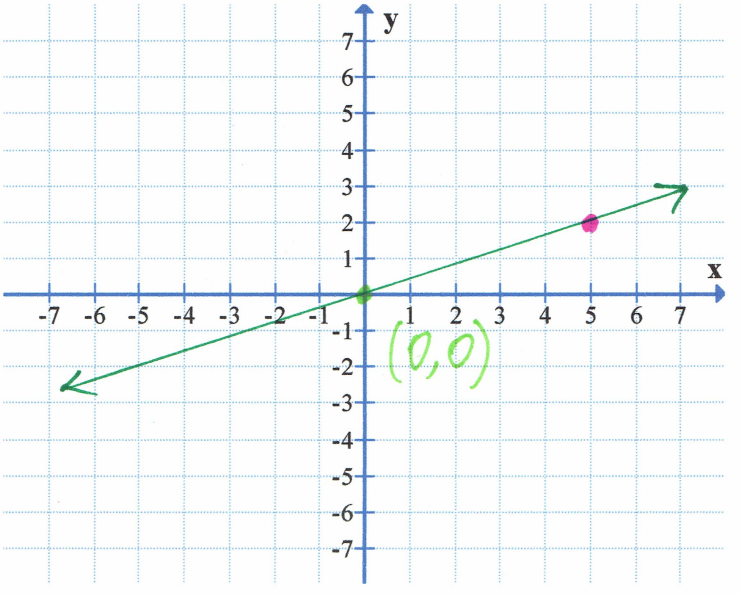
9) Graph the equation without using an "x y table." $y = \frac{2}{5}x$

Notice that when x is 0, you have:

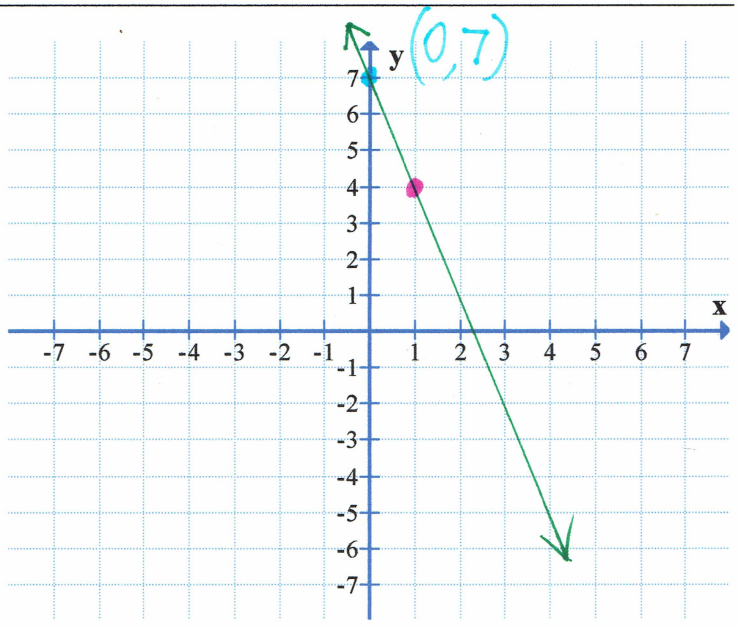
$y = \frac{2}{5} \cdot 0$

$y = 0,$

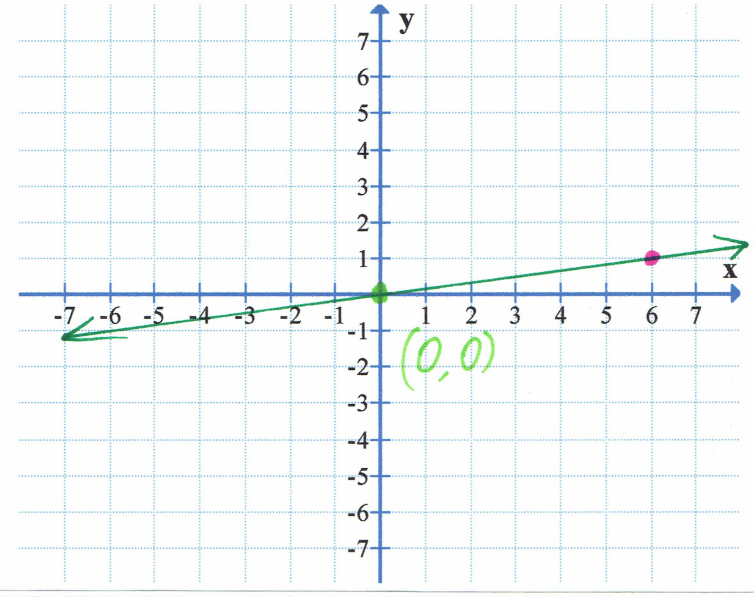
so you get on the graph with the ordered pair $(0, 0)$.



10) Graph the equation, without using an "x y table." $y = -3x + 7$



11) Graph the equation without using an "x y table." $y = \frac{1}{6}x$

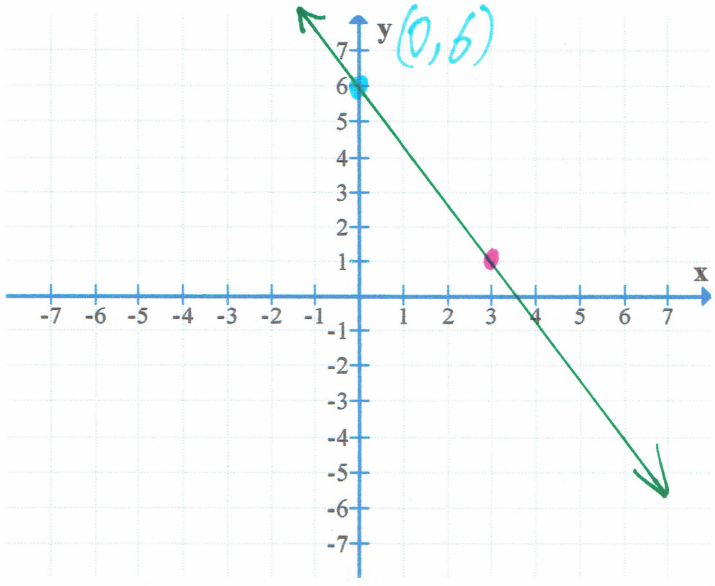


12) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $5x + 3y = 18$

$-5x \qquad -5x$

$$\frac{3y}{3} = \frac{-5x}{3} + \frac{18}{3}$$

$$y = -\frac{5}{3}x + 6$$

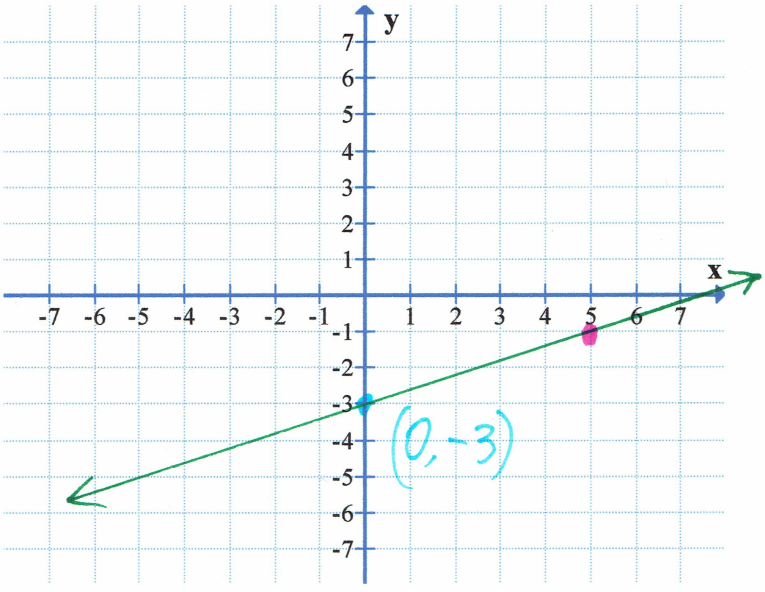


13) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $-10y + 4x = 30$

$-4x \quad -4x$

$\frac{-10y}{-10} = \frac{-4x}{-10} + \frac{30}{-10}$

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

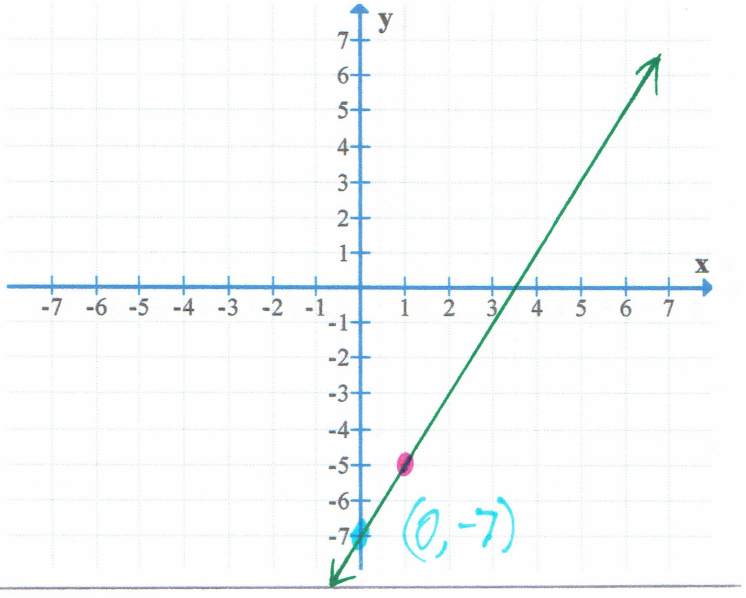


14) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $-6x + 3y = -21$

$+6x \quad +6x$

$\frac{3y}{3} = \frac{6x}{3} - \frac{21}{3}$

$y = \frac{2}{1}x - 7$

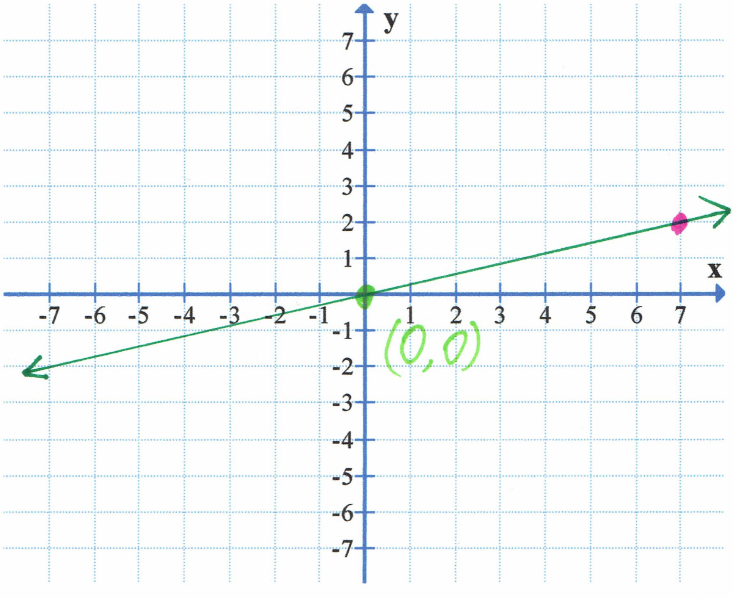


15) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $-2x + 7y = 0$

$+2x \quad +2x$

$\frac{7y}{7} = \frac{2x}{7}$

$y = \frac{2}{7}x$

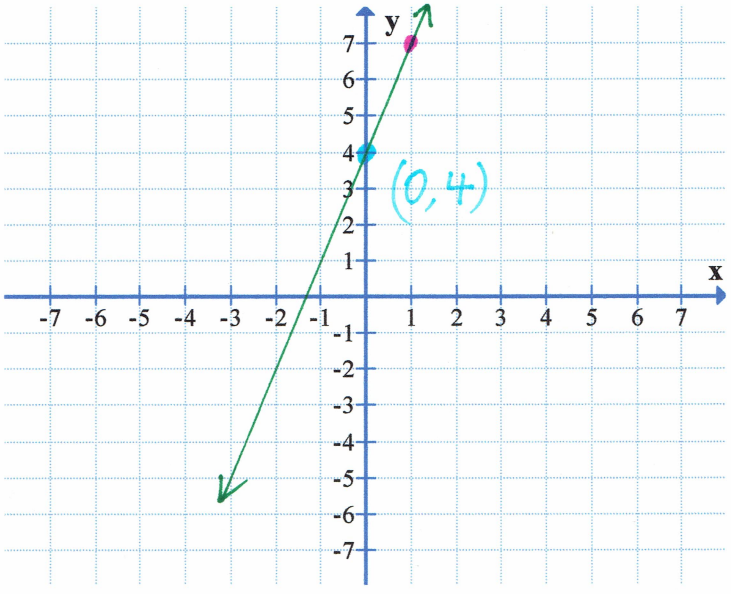


16) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $15x - 5y = -20$

$-15x \quad -15x$

$\frac{-5y}{-5} = \frac{-15x}{-5} - \frac{20}{-5}$

$y = \frac{3}{1}x + 4$

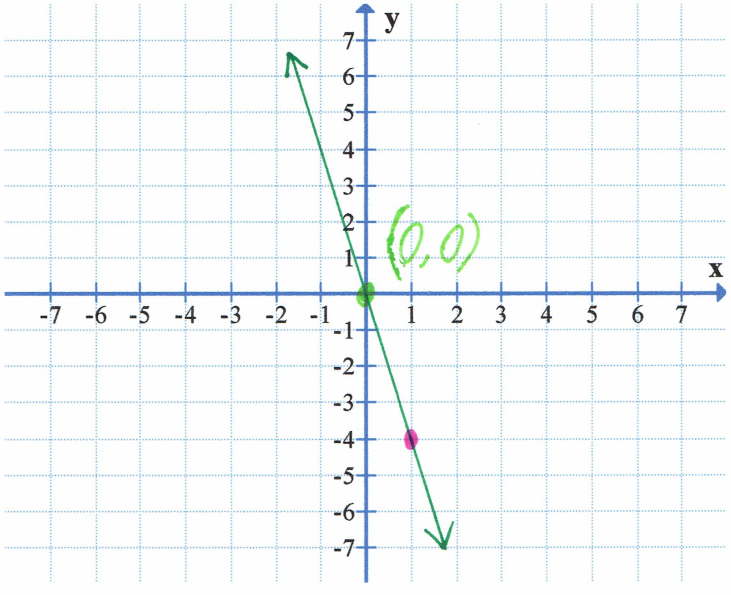


17) Rearrange the following equation from standard form to slope-intercept form, and then graph the equation without using an "x y table." $2y + 8x = 0$

$-8x \quad -8x$

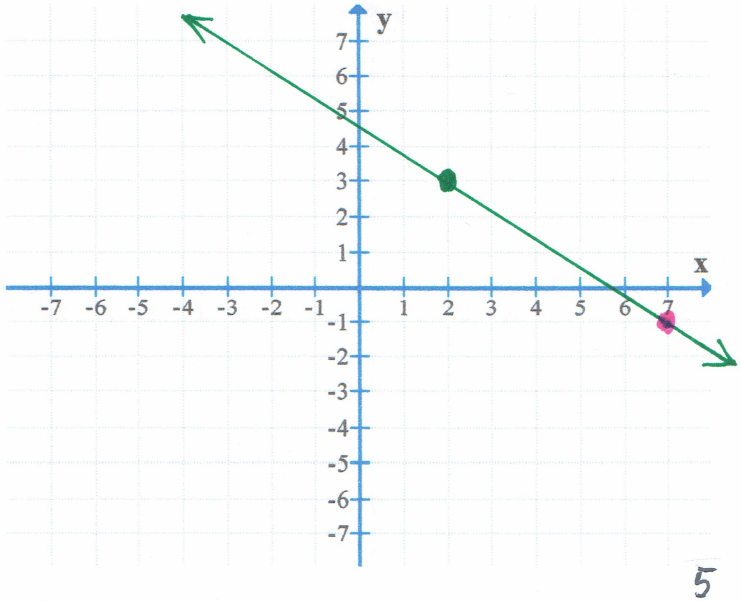
$\frac{2y}{2} = \frac{-8x}{2}$

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



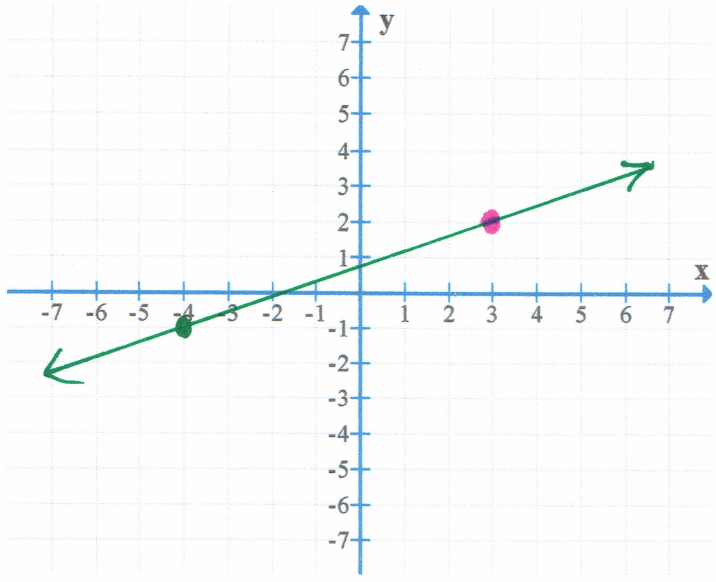
18) Graph the line using the given point and slope.

$(2, 3), \quad m = -\frac{4}{5}$



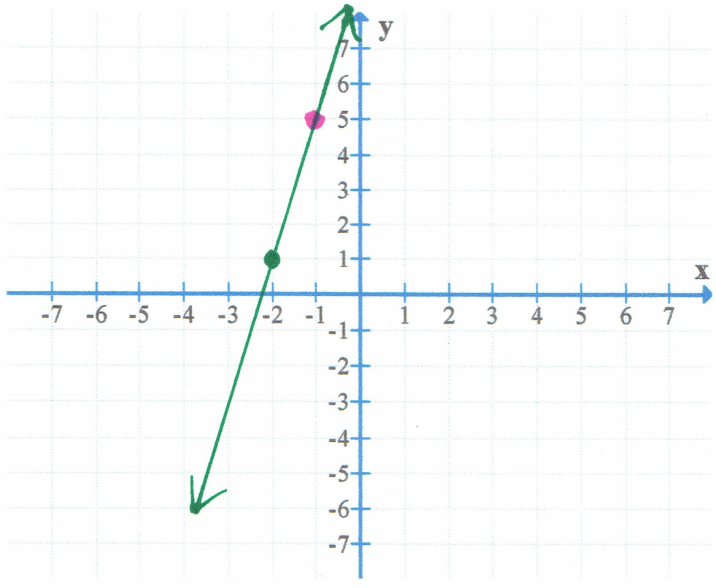
19) Graph the line using the given point and slope.

$(-4, -1), \quad m = \frac{3}{7}$



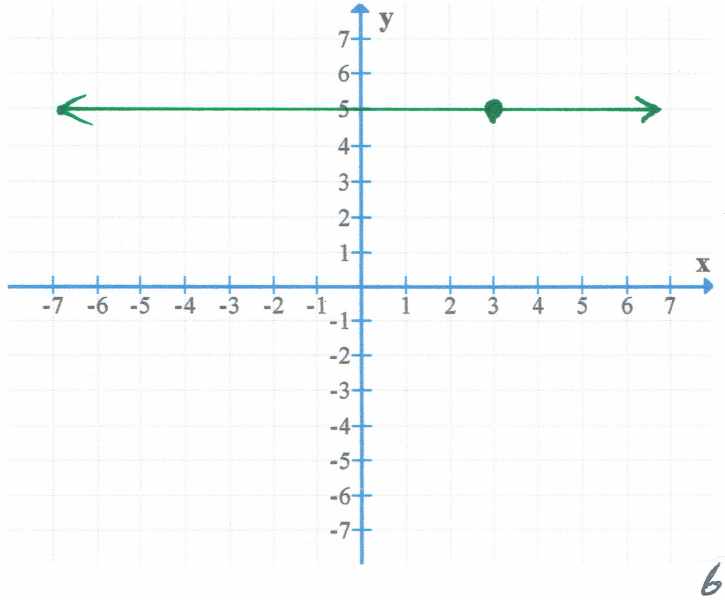
20) Graph the line using the given point and slope.

$(-2, 1), \quad m = \frac{4}{1}$



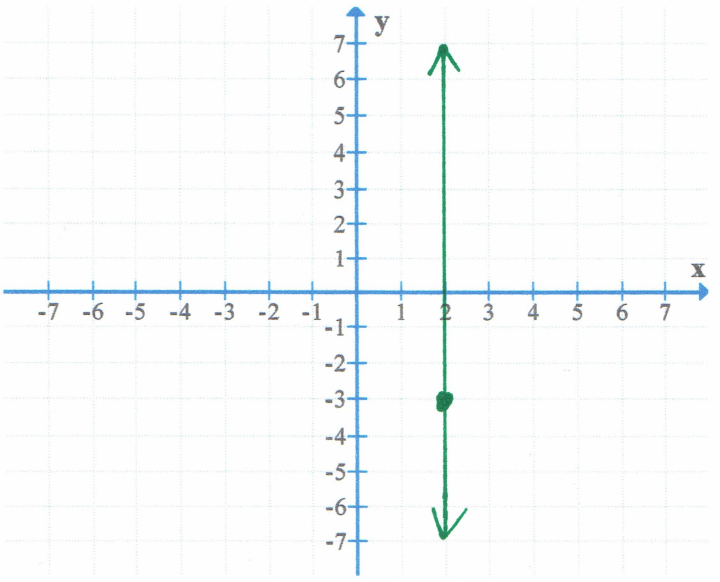
21) Graph the line using the given point and slope.

$(3, 5), \quad m = 0$



22) Graph the line using the given point and slope.

$(2, -3)$, m = undefined



For each of the next four problems, you are given two points and you are to find the slope. You will use the slope formula.
(Try to write it from memory; it's at bottom of page.)

slope formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

23) Given two points, find the slope.

$x_1\ y_1\ \ x_2\ y_2$

$(-5, 2)$, $(4, 7)$

$\frac{7-2}{4-(-5)} = \frac{5}{4+5} = \frac{5}{9}$

24) Given two points, find the slope.

$x_1\ y_1\ \ x_2\ y_2$

$(1, 3)$, $(-6, 3)$

$\frac{3-3}{-6-1} = \frac{0}{-7} = 0$

25) Given two points, find the slope.

$x_1\ y_1\ \ x_2\ y_2$

$(8, -6)$, $(1, 4)$

$\frac{4-(-6)}{1-8} = \frac{4+6}{-7} = -\frac{10}{7}$

26) Given two points, find the slope.

$x_1\ y_1\ \ x_2\ y_2$

$(5, 1)$, $(5, 9)$

$\frac{9-1}{5-5} = \frac{8}{0} =$ undefined

Slope formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Determine whether each pair of lines is parallel, perpendicular, or neither.

27) $y = -\frac{5}{7}x + 3$

$y = \frac{7}{5} - 2$

The slopes are negative reciprocals, so the lines are perpendicular.

28) $y = \frac{4}{9}x + 7$

$y = \frac{3}{11}x - 5$

neither

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

The slopes are the same, so the lines are parallel.

$-2x + 3y = 24$

$+2x \qquad +2x$

$\frac{3y}{3} = \frac{2x}{3} + \frac{24}{3}$

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

(Rearrange to slope-intercept form to compare the slope to the equation above.)