Homework review:

p. 288 (46)

$3.99 for an enlargement

$1.49 delivery per order

e = # of enlargements

Cost = $\boxed{3.99e + 1.49}$

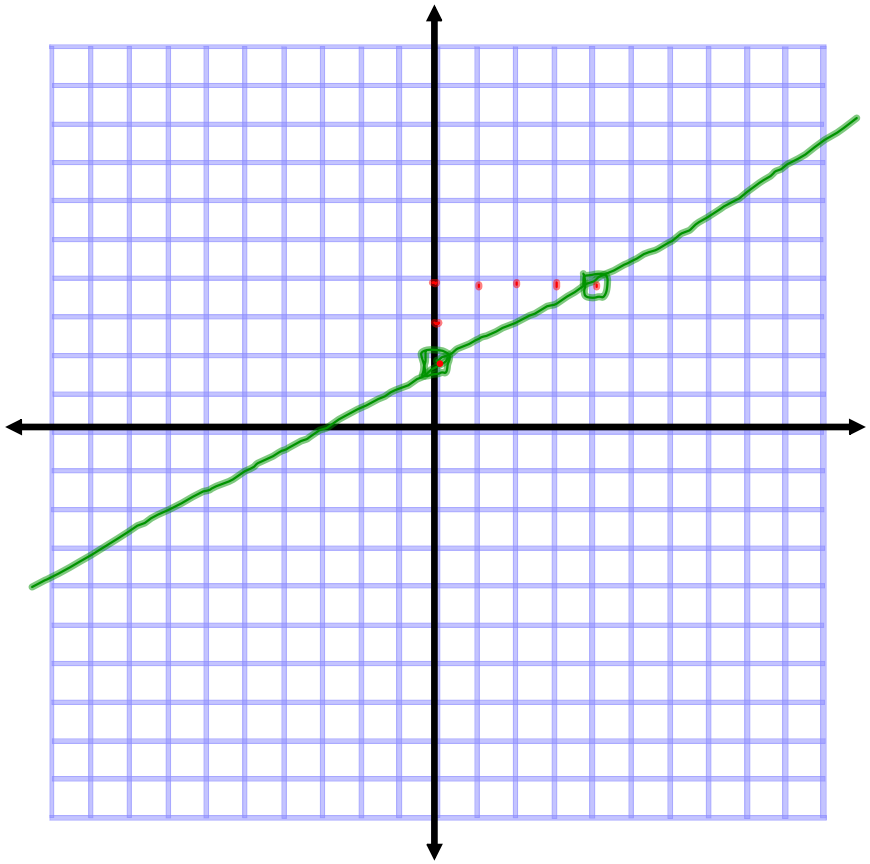
$3.99(8) + 1.49$

$\boxed{33.41 \text{ for } 8}$

$$\begin{array}{r} 31.92 \\ 1.49 \\ \hline 33.41 \end{array}$$

You now should be able to:

- → write an equation of a line by looking at an accurate graph
- → write an equation of a line if given slope, y-intercept
- → write an equation of a line if given y-intercept and 1 other point



$y = mx + b$

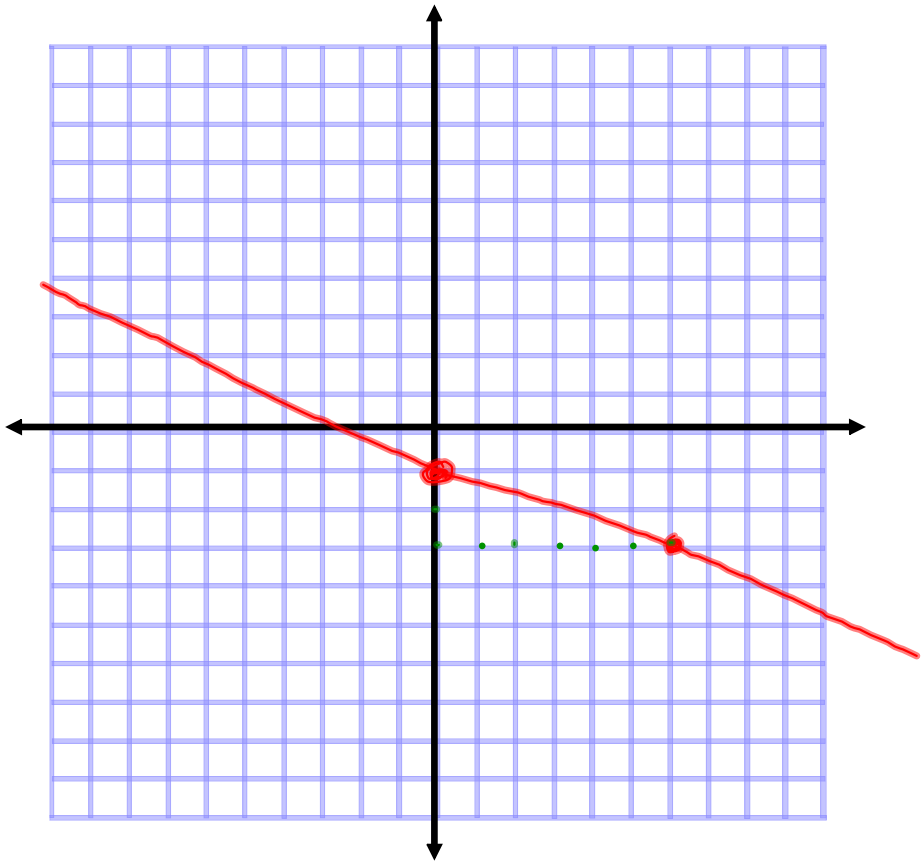
m = slope

b = y-intercept

$= 2$

$m = \frac{\text{rise}}{\text{run}} = \frac{2}{4} = \frac{1}{2}$

$y = \frac{1}{2}x + 2$



$y = mx + b$

$b = -1$

$m = \frac{\text{rise}}{\text{run}} = \frac{-2}{6} = \frac{-1}{3}$

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

y-int: -5

slope: $\frac{3}{2}$

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

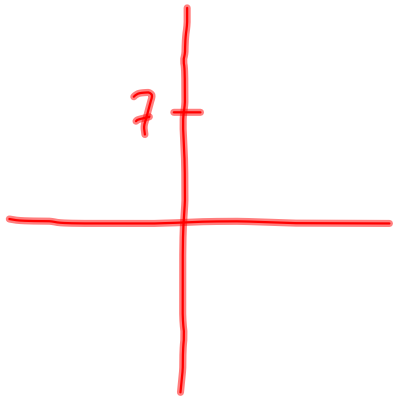
y-int: $-7{,}212.41625$

slope: $\frac{-3.167}{5.889}$

$y = \frac{-3.167}{5.889}x - 7212.41625$

$(0,7)$ $(2,-3)$

$b = 7$



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

$\frac{7 - -3}{0 - 2} = \frac{10}{-2} = -5$

$y = -5x + 7$

x_1, y_1 $\quad$ x_2, y_2

$(-3, 2) \quad (0, 4)$

$x = 0$

$y = mx + b$

b (y-intercept): 4

m (slope): $\frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{0 + 3} = \frac{2}{3}$

$y = \frac{2}{3}x + 4$

More methods for finding the equation of a line:

→ given the slope and one point on the line

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

1. Determine the slope (m)

2. Set up the equation (so far):

$y = mx + b$ $\qquad y = \frac{2}{3}x + b$

3. Substitute the x and y values for the point you're given - solve for b

$y = \frac{2}{3}x + b$ → true when $x = 4$, $y = 2$

$2 = \frac{2}{3}(4) + b$

$2 = \frac{8}{3} + b$

$-\frac{8}{3} \quad -\frac{8}{3}$

$b = 2 - \frac{8}{3}$

$\frac{6}{3} - \frac{8}{3} = \boxed{-\frac{2}{3}}$

4. Write the completed equation:

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

→ given two points on the line: (2,6)
(4,-1)

1. Find the slope (m)

$$m = \frac{y_2 - y_1}{x_2 - x_1} \qquad \frac{-1-6}{4-2} = \frac{-7}{2}$$

2. Write the equation so far:

$$y = mx + b \qquad y = \frac{-7}{2}x + b$$

3. Substitute either point into the equation $y=6,\ x=2$

$$6 = \frac{-7}{2}(2) + b$$

$$6 = -7 + b$$

$$+7 \quad +7$$

$$b = 13$$

4. Write the equation

$$y = \frac{-7}{2}x + 13$$

$y = mx + b$

Write an equation of the line that passes through the given point and has slope *m*.

1. $(-1, 6); m = 5$ (x, y)

$y = 5x + 11$

$y = 5x + b$

$6 = 5(-1) + b = -5 + b$

$+5 \quad +5$

$b = 11$

2. $(10, 3); m = -2$

$y = -2x + 23$

3. $(2, -3); m = 7$

$y = 7x - 17$

4. $(-4, -9); m = 2$

$y = 2x - 1$

5. $(5, -4); m = \frac{1}{3}$

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

$-4 = \frac{1}{3}(5) + b$

$-4 = \frac{5}{3} + b$

$-\frac{5}{3} \quad -\frac{5}{3}$

$b = -4 - \frac{5}{3} = \frac{-12}{3} - \frac{5}{3}$

$= \frac{-17}{3}$

$y = \frac{1}{3}x - \frac{17}{3}$

6. $(-8, 1); m = -\frac{3}{4}$

$y = \frac{-3}{4}x + b$

$1 = \frac{-3}{4}(-8) + b$

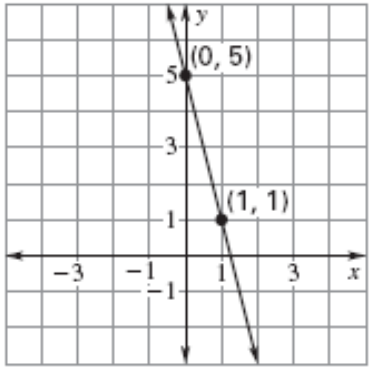
$1 = 6 + b$

$b = -5$

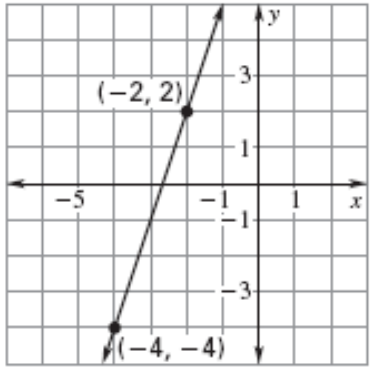
$y = \frac{-3}{4}x - 5$

Write an equation of the line shown.

7.



8.



$x_1 \quad y_1$

$(-2, 2)$

$(-4, -4)$

$x_2 \quad y_2$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 2}{-4 + (+2)} = \frac{-6}{-2} = \boxed{3}$$

$y = 3x + b$

$2 = 3(-2) + b$

$2 = -6 + b$

$+6 \quad +6$

$\boxed{b = 8}$

$y = 3x + 8$

Write an equation of the line that passes through the given points.

10. $(-10, 7), (5, -3)$

11. $(-5, -3), (12, 17.4)$

12. $(-8, 84), (5, -46)$

SKILLS TEST - ch. 4 & 5 (FRIDAY, 10/17)

UNIT TEST - ch. 4 & 5 (THURSDAY, 10/23)

Homework: p. 296 3-39 (every 3rd), 50, 52

SKIP 24 & 27