Functions Test Review

What is the slope of the line that passes through the given points?

1. (–12, –4) and (11, –10)

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-10 - (-4)}{11 - (-12)}$

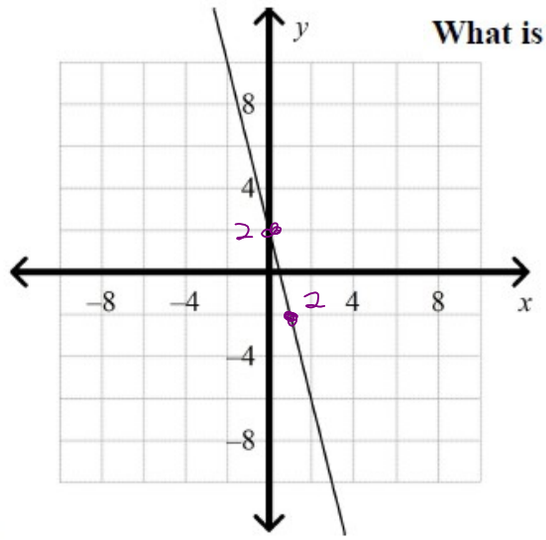
$= \frac{-6}{23}$

$11 - (-12) = 11 + 12$

2. $m = \frac{1}{2}$ and the y-intercept is (0, –5)

$y = mx + b$

$y = \frac{1}{2}x - 5$

3. 

What is an equation of the line in slope intercept form?

y-int = 2

slope (m) = $-\frac{4}{1} = -4$

$y = mx + b$

$y = -4x + 2$

Write the equation in slope-intercept form. What are the slope and y-intercept?

4. $-12x - 4y = 10$

$+12x \quad +12x$

$\frac{-4y}{-4} = \frac{12x}{-4} + \frac{10}{-4}$

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

$m = -3$

$y\text{-int} = -\frac{5}{2}$

Write an equation of the line, in point-slope form, that passes through the two given points.

5. points: $(-3,3), (9,-3)$

x_1, y_1 x_2, y_2

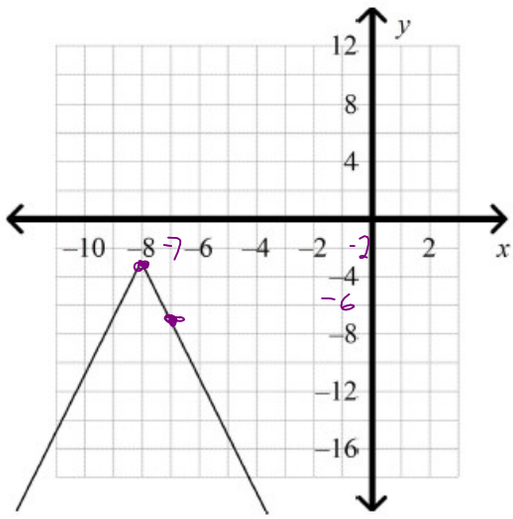
$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-3-3}{9-(-3)} = \frac{-6}{12} = -\frac{1}{2}$

$9+3$

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

What is the equation of the absolute value function?

6.



vertex $(-8, -3)$

$a = -\frac{4}{1} = -4$

$y = -4|x+8|-3$

What is the graph of the equation?

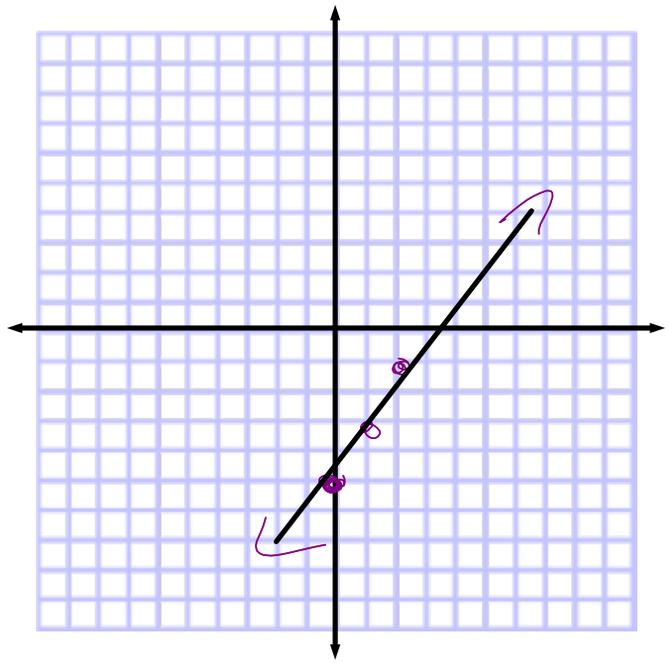
7. $2x - y = 5$

$-2x \quad -2x$

$\frac{-y}{-1} = \frac{-2x}{-1} + \frac{5}{-1}$

$y = 2x - 5$

$m = \frac{2 \text{ up}}{1 \text{ right}}$ y-int = -5



What is an equation of the line, in point-slope form, that passes through the given point and has the given slope?

8. point: (5,6); slope: $\frac{2}{5}$

x, y

$y - y_1 = m(x - x_1)$

$y - 6 = \frac{2}{5}(x - 5)$

What is the equation of the given line in standard form? Use integer coefficients.

9. $y = \frac{5}{7}x - 12$) 7

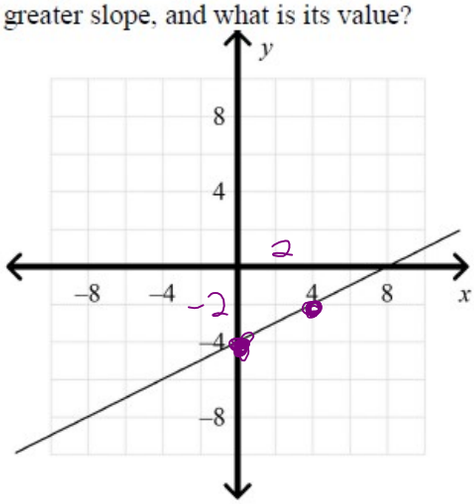
$Ax + By = C$

$7y = 5x - 84$

$-5x \quad -5x$

$-5x + 7y = -84$

___ 10. Compare the equation $-2x + 2y = -8$ to the graph below each represent linear functions. Which has the greater slope, and what is its value?



equation $-2x+2y=-8$

$+2x \quad +2x$

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

$y = 1x - 4 \rightarrow m = 1$

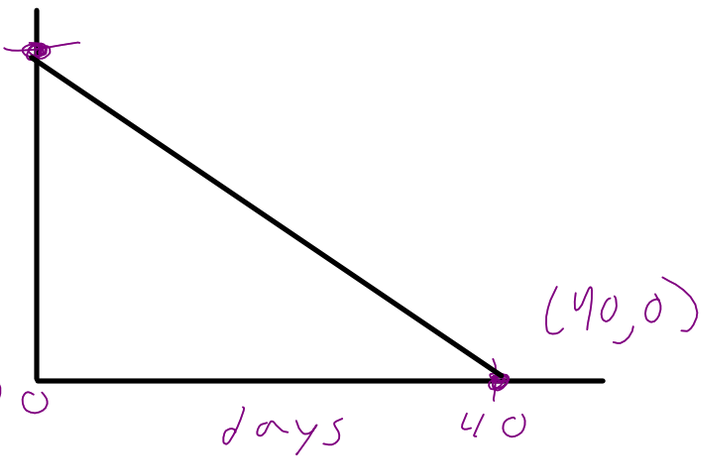
Graph $m = \frac{2}{4} = \frac{1}{2}$

equation, $m = 1$

___ 11. The office manager of a small office ordered 180 packs of printer paper. Based on average daily use, she knows that the paper will last about 40 days. What graph represents this situation? How many packs of printer paper should the manager expect to have after 35 days?

$\frac{180}{-40} = -4.5$

(0, 180)



paper

35(4.5)

157.5 used

left 180 − 157.5 = 22.5

What is the equation of the line in slope-intercept form?

12. the line parallel to $y = 8x - 8$ through $(5, 2)$

x, y

$m = 8$

$y - y_1 = m(x - x_1)$

$y - 2 = 8(x - 5)$

$y - 2 = 8x - 40$

$+2 \quad +2$

$y = 8x - 38$

13. the line perpendicular to $y = \frac{1}{3}x + 5$ through $(2, 1)$

$m = \frac{1}{3} \rightarrow -\frac{1}{3} \rightarrow \frac{-3}{1} = -3$

$y - 1 = -3(x - 2)$

$y - 1 = -3x + 6$

$+1 \quad +1$

$y = -3x + 7$