Homework Review - "Find the Equation" Worksheet

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

$\frac{-2}{3} \longrightarrow \boxed{\frac{3}{2}}$

$m = \frac{3}{2}$ $(1,3)$

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

$3 = \frac{3}{2}(1) + b$

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

$-\frac{3}{2} \quad -\frac{3}{2}$

$(1,3)$

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

$2 \cdot \frac{3}{2} + \frac{-3}{2}$

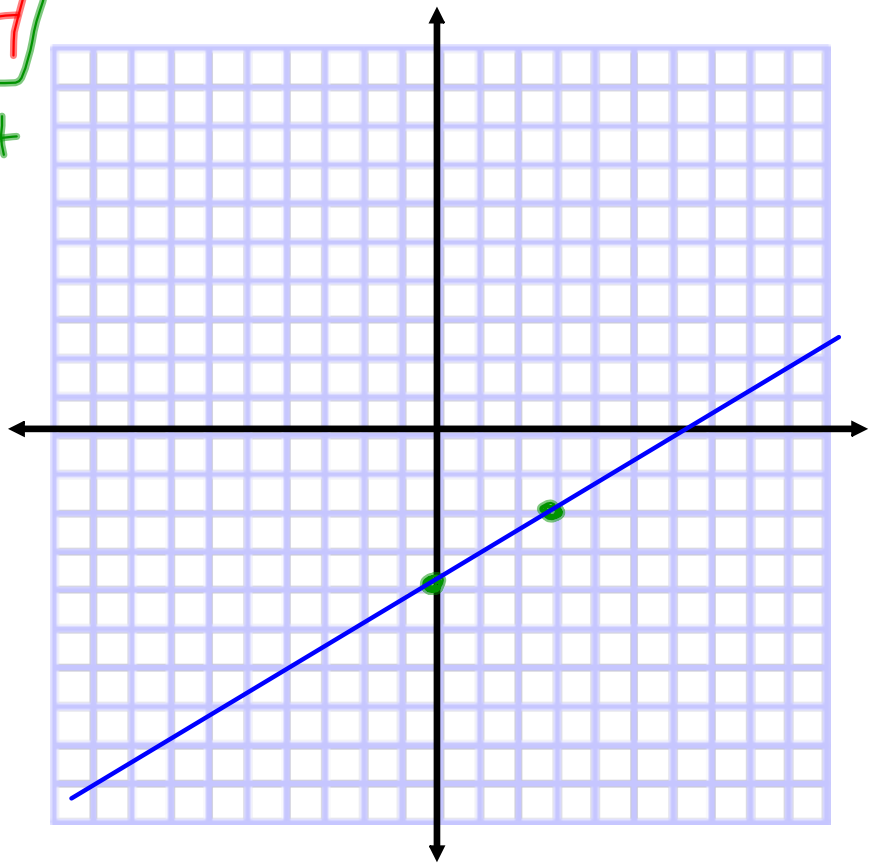
$2 \cdot \frac{1}{1}$

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

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

slope y-int

$\frac{\text{rise}}{\text{run}}$



Review - Chapter 4, 5, and 6.7 Test

Sections 4.1 - 4.5, 4.7, 5.1, 5.2, 5.5, 5.6, and 6.7

Angelica, Michael, Emma, Raquel — A
Ashley, Brandon, Carly, Dana, Kate C. — B
Chase, Eden, Maria, mcKenna — C
Aaliyah, Aaron, Anicah, Hadley, Ryan — D
Allison, Kate F., Nick K., Thomas — E
Cesar, Kelsey, Mikayla, Mitch, Sam — F

$$m(x) = -8x + 10; -6$$

x

$$2y - 12x = -6$$

X and Y intercepts

$2(0) - 12x = -6$

$\frac{-12x}{-12} = \frac{-6}{-12}$

$x = \frac{1}{2}$ int.

$2y - 12(0) = -6$

$\frac{2y}{2} = \frac{-6}{2}$

$y = -3$ int.

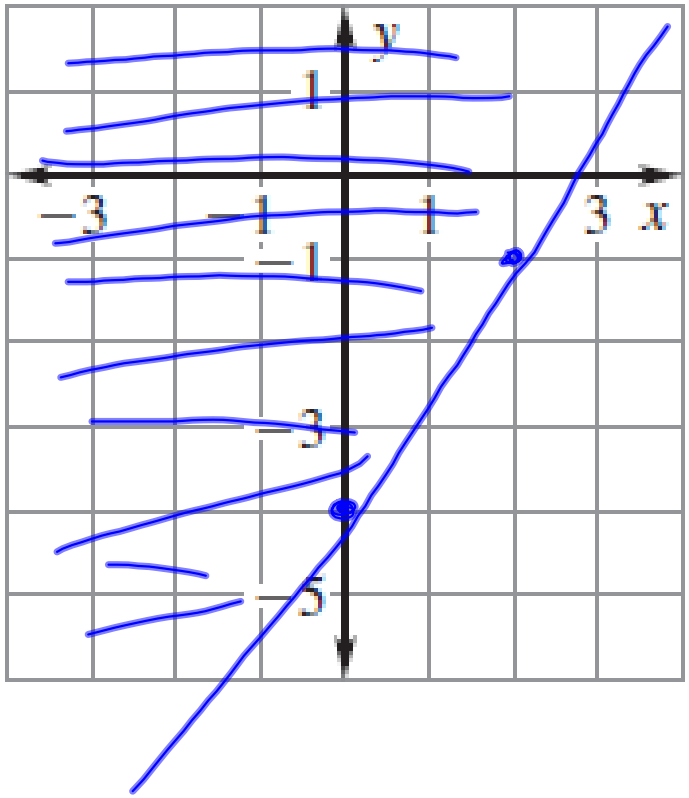
$$2y - 3x \geq -8$$

$2y - 3x \geq -8$

$+3x \quad +3x$

$\frac{2y}{2} \geq \frac{3x}{2} - \frac{8}{2}$

$y \geq \frac{3}{2}x - 4$



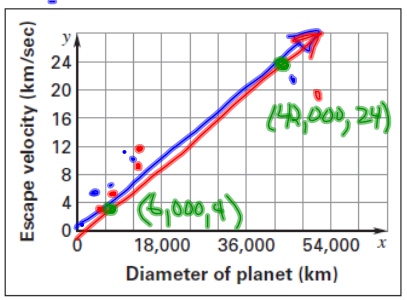
Escape Velocity The table shows several planet diameters and escape velocities. The escape velocity is the velocity at which an object has to travel in order to escape the effect of a planet's gravity.

Planet	Mercury	Uranus	Earth	Mars	Venus
Diameter (km)	~~4879~~ 5000	~~51,118~~ 50000	~~12,756~~ 12000	~~6794~~ 6000	~~12,104~~ 12000
Escape velocity (km/sec)	~~4.3~~ 4	~~21.3~~ 20	~~11.186~~ 12	~~5.03~~ 6	~~10.36~~ 10

a. Make a scatter plot of the data. Let x represent the diameter of the planet and let y represent the escape velocity.

b. Find an equation that models the escape velocity (in kilometers per second) as a function of the diameter (in kilometers).

c. Approximate the escape velocity of Neptune, which has a diameter of 49,528 kilometers.



$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{24-4}{42000-6000} = \frac{20}{36000} = \frac{1}{1800}$$

$y = \frac{1}{1800}x + b$

$y = \frac{1}{2000}x + b$

$4 = \frac{6000}{2000} + b$

$4 = 3 + b$

$-3 \quad -3$

$1 = b$

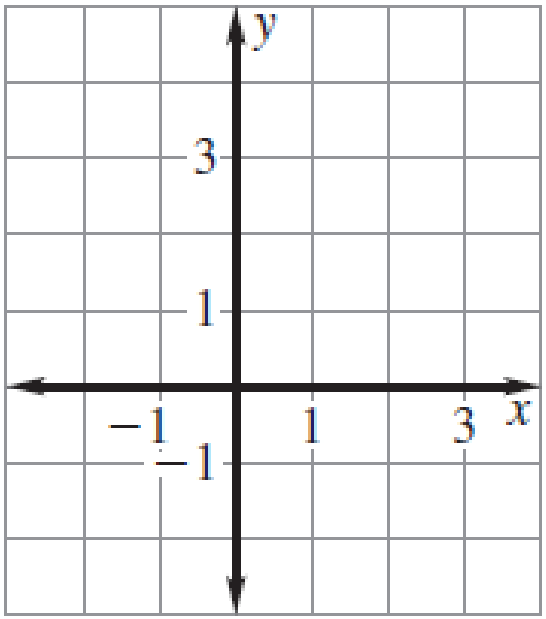
$y = \frac{1}{2000}x$

$y = \frac{1}{2000} \cdot 50000$

$= \frac{50000}{2000} = 25$

$\begin{array}{r} 49528 \\ 50000 \end{array}$

$$3x - 2y = 0$$



$(7, 5), (x_2, 2); m = \frac{3}{4}$

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

$\frac{3}{4} = \frac{2 + 5}{x + 7}$

$\frac{3}{4} = \frac{-3}{x + 7}$

$3(x + 7) = 4(-3)$

$3x + 21 = -12$

$+21 \quad +21$

$\frac{3x}{3} = \frac{9}{3}$

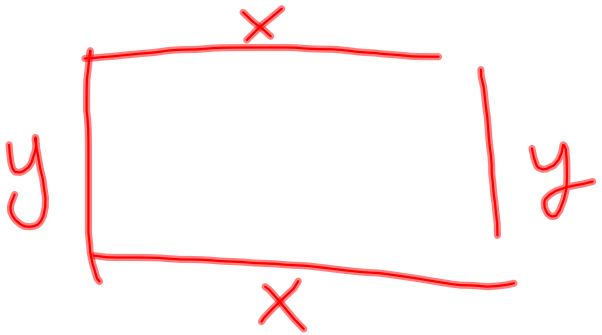
$x = 3$

$$f(\underbrace{-4}_{x_1}) = \underbrace{-2}_{y_1}, f(\underbrace{2}_{x_2}) = \underbrace{7}_{y_2}$$

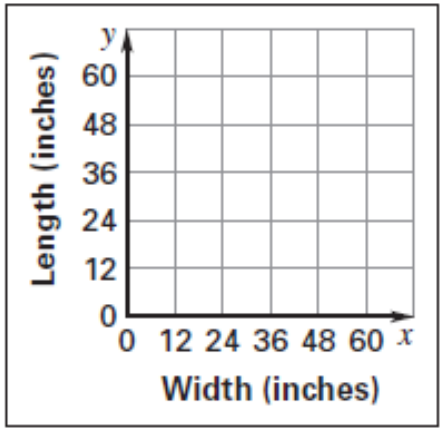
Rabbit Hutch The cage that you keep your rabbit in has a perimeter of 118 inches. Let x be the cage's width (in inches) and let y be its length (in inches).

a. Write an equation for the perimeter.

b. Find the intercepts of the graph of the equation you wrote. Then graph the equation.



$2x + 2y = 118$



Homework:

p. 272, 9-17 odd, 18-21, 30, 31, 34

p. 345, 7-10, 18-21

p. 418, 38-44 even