

Linear Functions - Practice 1

Name: _____

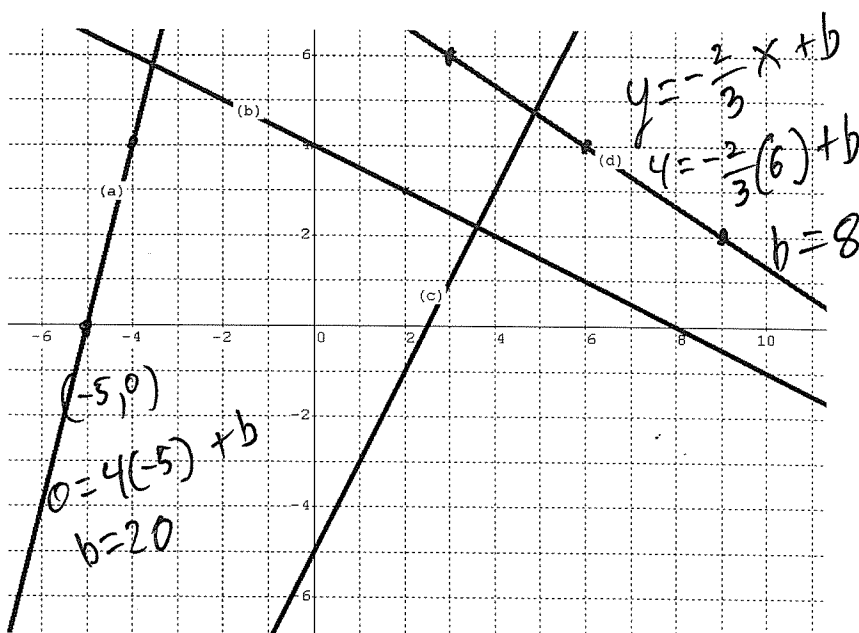
1) Determine the equation of each line shown below.

a) $y = 4x + 20$

b) $y = -\frac{1}{2}x + 4$

c) $y = 2x - 5$

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



2) Determine the equation of each line given the information below.

a) point on line: $(10, 2)$ slope = $\frac{1}{2}$

$$2 = \frac{1}{2}(10) + b$$

$$b = -3$$

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

b) x-intercept of -5 , slope = 1

$(-5, 0)$ $0 = -5(1) + b$

$$b = 5$$

$$y = x + 5$$

c) Line passes through points $(2, -1)$ and $(5, -3)$

$$\text{slope} = \frac{-3 - (-1)}{5 - 2} = -\frac{2}{3}$$

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

$$b = \frac{1}{3}$$

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

3) Mr. Haas got a summer job delivering pizzas. He decided that the delivery charge should be a linear equation, where the cost of delivery is a function of the distance from the pizza restaurant. The table shows the cost for four different distances.

Distance (miles)	Cost (dollars)
2	2
4	3
6	4
8	5

a) Find the linear equation represented by the data in the table.

$$\text{slope} = \frac{1}{2} \quad 2 = \frac{1}{2} \cdot 2 + b$$

$$b = 1$$

$$y = .5x + 1$$

b) What does the slope tell you in terms of distance and cost?

Slope is cost per distance, 50 cents per mile

c) What is the y-intercept? What does it tell you in terms of distance and cost?

y-intercept = 1 Cost is \$1 for 0 miles.

d) Use your equation to determine the cost of delivering a pizza 1000 miles

$$y = .5(1000) + 1 \quad \text{cost} = \$501$$

e) Use your equation to determine the delivery distance where the cost would be \$0.

$$0 = .5x + 1$$

$$-\frac{1}{.5} = x$$

$$x = -2$$

It costs \$0 for a distance of -2 miles.

