

Math 113 – Linear Functions Practice Test

(1) Define the x and y intercepts of the line $6x + 3y = 18$

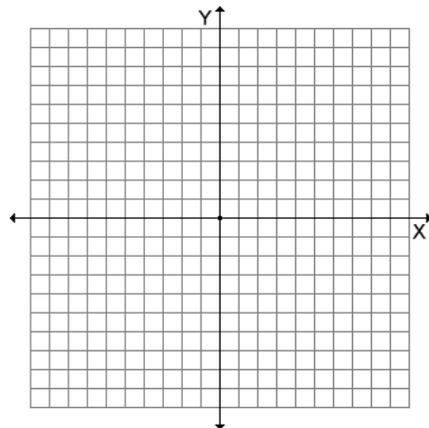
x - intercept: _____ y -intercept: _____

(2) Complete the table of values for the line

$$4x + 3y = 36$$

x	y
0	
	0
	4
12	

(3) Graph the line that contains the point $(2,3)$ and has a slope of 3.



Label Your
Points!!!

(4) Find the slope of the line containing the points (1,1) and (3,8)

$$m = \underline{\hspace{4cm}}$$

(5) Find the equation of the line (**in Slope-Intercept Form**) containing the point (2,5) and a slope = -1

$$\underline{\hspace{4cm}}$$

(6) Find the slope of the line $4x - 2y = 5$.

$$\underline{\hspace{4cm}}$$

(7) Find the equation of the line (**in Standard Form**) that contains the points (3,5) and (7,1)

$$\underline{\hspace{4cm}}$$

(8) Find the equation of the line that is perpendicular to the line $3x + y = 3$ and contains the point (6,10).

$$\underline{\hspace{4cm}}$$

(9) Find the equation of the line that is parallel to the line $5x - 3y = 15$ and contains the point $(6,9)$.

(10) Find the equation of the line that is perpendicular to the line $x = 4$ and goes through the point $(3,2)$.

(11) Find the equation of a line that goes through the point $(6,7)$ and has a slope of 0.

(12) In 2002, the cost of a Honda Pilot was \$28,500. In 2005, the cost of a Honda Pilot was \$32,400. Let $x = 0$ for year 2002. Assuming that the relationship between time and cost is linear, determine a formula for predicting the cost of a Honda Pilot. Use this formula to predict the cost of a Honda Pilot in 2011.

(13) A plant can manufacture 120 lamps for a total daily cost of \$7,140 and 250 lamps for \$8,700.

- a. If the total daily cost of producing lamps is linearly related to the number of lamps produced, determine the cost function for total daily costs for x lamps.

- b. What would be the cost of producing 350 lamps?

- c. If the selling price of these lamps is \$50 per lamp, what is the revenue function for the lamps?

- d. What is the break-even point for these lamps?

- e. What is the profit function for these lamps?

- f. What profit would be made by selling 225 lamps?

(14) If a product has a selling price of \$110, consumers are willing to buy 200 units of it. If the price is \$70, they will buy 400 units. A manufacturer will produce 150 units of the product if the selling price is \$60 or 250 units if the selling price is \$120.

a. Find the demand function. _____

b. Find the supply function. _____

c. If the price of the product were \$150, how many units would manufacturers produce?

d. What is the market equilibrium (both price and quantity)?

Bonus:

Graph the Cost Function and Revenue Function from Problem #13.

