Math 1 – Worksheet 2

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Name: _____

1. Write the letter in the space provided that best describes the function over the entire domain.

(i) _____ The rate of change is 0	A. A vertical line
(ii) _____ The rate of change is > 0	B. A horizontal line
(iii) _____ The rate of change is undefined	C. An increasing linear function
(iv) _____ The rate of change is < 0	D. A decreasing linear function

2. Given the following table:

t	-2	1	4	7
$h(t)$	10	6	2	-2

   (a) Find the formula for $h(t)$.

   (b) Find the t-intercept of this function.

   (c) Find the h intercept of this function.

3. Match each graph with the corresponding line.

(a) _____ $y = 2$

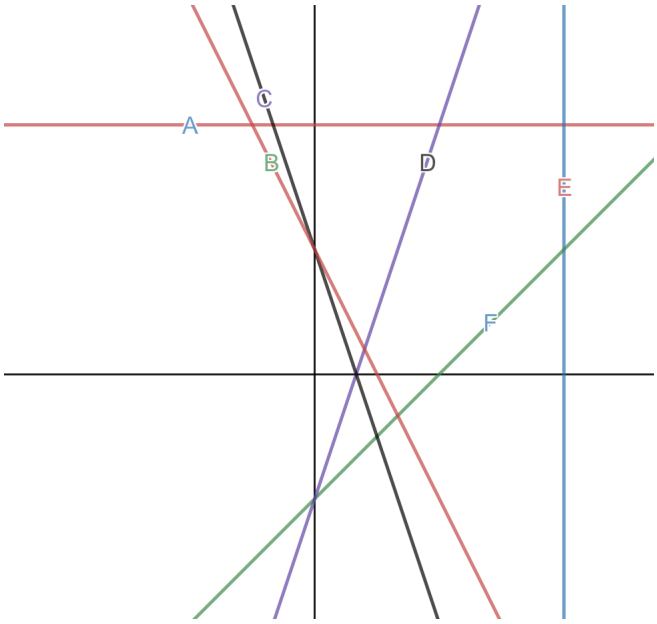
(b) _____ $x = 2$

(c) _____ $y = x - 1$

(d) _____ $y = 3x - 1$

(e) _____ $y = 1 - 3x$

(f) _____ $y = 1 - 2x$



4. A company's profit is linearly related to the number of items the company sells. Profit is a function of the number of items sold. If the company sells 1200 items, the profit is \$15,000. If the company sells 1800 items, the profit is \$18,000.

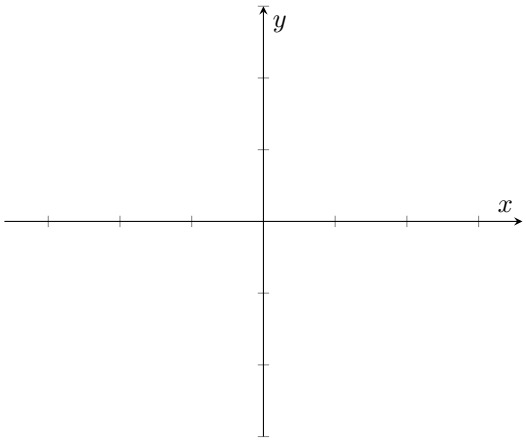
   (a) Find the slope and explain what it means in words.

   (b) Find the vertical (profit) intercept and explain what it means in words.

   (c) If f represents the company's profit, find $f(2500)$ and explain what it means in words.

5. A linear function $f(x)$ passes through the point $f(-2) = -1$ with slope of $\frac{1}{3}$.

   (a) Graph the function $f(x)$.



   (b) Write the function for $f(x)$.

   (c) Write the equation of a line $g(x)$ that is perpendicular to $f(x)$ and passes through the point $(0, 2)$.

   (d) Graph $g(x)$ (use coordinate system provided in (a)).

   (e) Find the coordinates of the intersection of $f(x)$ and $g(x)$.

6. In 1995 Bob started a rental company with 20 cars. Bob expands his rental company by 15 cars a year. In what year will he exceed 130 cars?

7. Solve the following equation for x:

$$2|x+1|-3=5$$

8. Solve the following inequalities for x, write your answer in interval notation.

   (a) $|2x-1| \leq 5$

   (b) $|3x+6| > 3$