

COLLEGE ALGEBRA

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GPS #2

1.2

GRAPHS OF FUNCTIONS

Class Time: 11:30 Date: 1-8-07

Useful Guidelines:

- * Relation: A set of ordered pairs. [Example: $S = \{(-1,3), (2,4), (3,-2), (4,5)\}$]
- * Domain: In a relation consisting of ordered pairs (x,y) , the set of x -values is the domain.
- * Range: In a relation consisting of ordered pairs (x,y) , the set of y -values is the range.

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1. Identify the domain and range of the following:

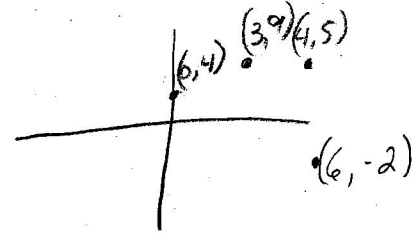
$$S = \{(-1,2), (1,3), (5,-1), (9,2)\}$$

$$D: \{-1, 1, 5, 9\}$$

$$R: \{2, 3, -1\}$$

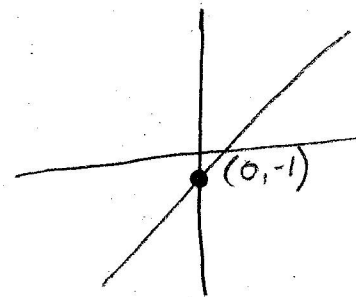
2. Make a scatterplot of the relation $S = \{(0,4), (3,9), (6,-2), (4,5)\}$.

is a function



3. Evaluate $y = 5x - 1$ for $x = -2, -1, 0, 1$ and 2 . Plot the resulting ordered pairs.

x	$y = 5x - 1$	(x, y)
-2	-11	$(-2, -11)$
-1	-6	$(-1, -6)$
0	-1	$(0, -1)$
1	4	$(1, 4)$
2	9	$(2, 9)$



4. Suppose $f(x) = 4x^2 + 3x$ thousand dollars can be earned, where x is the number of years after 2006.

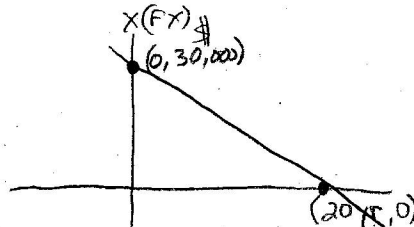
a. What is $f(3)$? $4(9) + 3(3) = 45$ thousand dollars.

b. The answer to part (a) gives the number of thousand dollars earned for what year?

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5. Suppose a car valued at \$30,000 is depreciated over 3 years by the straight-line method, so that its value x years after the depreciation began is $f(x) = 30,000 - 1,500x$.

a. Graph this function.



x	$f(x) = 30,000 - 1,500x$
0	30,000
20	0

b. What is the value 2 years after the depreciation is started? $f(x) = 30,000 - 1,500x$

$$f(2) = 30,000 - 1,500(2) = \$27,000$$