Assignment 1.1

Carlos and Clarita had 360 square feet of space to use for their pet sitting business, each cat pen uses 6 square feet and each dog run uses 24 square feet. They created this table to show all combinations that would use the entire space.

cats	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
dogs	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

- 1. Write five ordered pairs that have cats as the input value and dogs as the output value.
- 2. Write an explicit equation that shows the number of dogs they can accommodate based on how many cats they have. [d will be a function of c or d = f(c)]
- 3. Write five ordered pairs that have dogs as the input value and cats as the output value.
- 4. Write an explicit equation that shows the number of cats they can accommodate based on how many dogs they have. [c will be a function of d or c = g(d)]
- 5. Describe how are the ordered pairs you made in #1 and #3 are different?
- 6. a. Describe the domain for #2
 - b. Describe the domain for #4
 - c. What is the relationship between them?

Refresh Your Memory

Use the following functions:

$$f(x) = x$$

$$g(x) = 5x - 12$$

$$h(x) = x^2 + 4x - 7$$

Use the given input value in the correct function from above to calculate the output value or fully simplify.

7. a.
$$f(10)$$

b.
$$f(-2)$$

c.
$$f(a)$$

$$f(a)$$
 d. $f(a+b)$

8. a.
$$g(10)$$

b.
$$g(-2)$$

c.
$$g(a)$$

d.
$$g(a+b)$$

9. a.
$$h(10)$$

b.
$$h(-2)$$

c.
$$h(a)$$

d.
$$h(a+b)$$

10. Identify what kind of function each equation makes.

a.
$$f(x) = x$$
 is a _____ function.

b.
$$g(x) = 5x - 12$$
 is a ______ function.

c.
$$h(x) = x^2 + 4x - 7$$
 is a ______ function.