Chapter 4 Midterm Review

Does the data in the chart represent a linear function? Explain.

1.)

X	Y
0	5
1	8
2	11
3	14

+3
+3
+3

YES - constant rate of change

2.)

X	Y
3	11
4	18
5	27
6	38

+7
+9
+11

NO - rate of change increases

3.) The total weight W, in pounds, of a tractor-trailer capable of carrying 8 cars depends on the numbers of cars, c, on the tractor-trailer. When there are no cars on the trailer, it weighs 37,000 pounds. Each car weighs 4200 pounds.

a.) Write a function of the weight of the tractor-trailer with any given number of cars being carried.

$$W = 4200c + 37000$$

b.) What is the domain of the function? INTEGERS
INPUTS or "X" VALUES   0 THROUGH 8

$$\{0, 1, 2, 3, 4, 5, 6, 7, 8\}$$

c.) What is the range?

37,000 THROUGH 70,600 lbs.
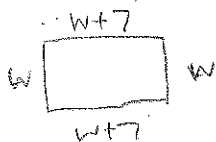
(0 cars JUST EMPTY TRAILER)   (8 CARS @ 4200 POUNDS PLUS 37,000 POUND TRAILER)

d.) If you were to graph the data would it be continuous or discrete? Explain why you chose your answer.

DISCRETE:
WEIGHT JUMPS 4200 lbs FOR EACH ADDITIONAL CAR

4.) The length of a shoebox is 7 inches more than the width. The perimeter of the shoebox is 38 inches. Write an equation that can be used to find width using this information.

w+7
w [   ] w
w+7

$$4w + 14 = 38$$
$$4w = 24$$
$$w = 6$$

DRAW A PICTURE!