HN Math III
Unit 3, Day 7 Homework Problems

Name KEY
Date _____ Period _____

1. Aril and Dita are wealthy Norwegian business owners who each opened their own donation funds at the same time. Their funds make monthly donations to international disaster relief, and Aril and Dita want to analyze the cumulative amount of money each of them donated.
The cumulative number of Norwegian Kroners donated by each person as a function of time (in months) is modeled by the following functions, which are defined by positive integers only:

Aril: $a(n) = 300n^2$

Dita: $d(n) = 5 \cdot 3^x$

a) Create a table of values for each business owner beginning with x = 0

n	0	1	2	3	4	5
a(n)	0	300	1200	2700	4800	7500

n	0	1	2	3	4	5
d(n)	5	15	45	135	405	1215

b) Find the average rate of change for each business owner from x = 1 to x = 3

a(n): 1200 d(n): 60

c) Find the average rate of change for each business owner from x = 4 to x = 5

a(n): 2700 d(n): 810

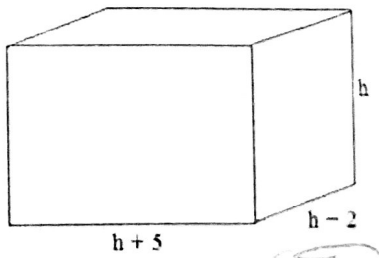
d) What observations can you make about the average rates of change?

Answers will vary. must discuss average rates of change.

2. The area of a rectangle is $x^2 - 6x - 16$. If the width is $x + 2$, then what is the length?

X-8

3. The volume of a metal box is 30 cubic feet. If the length is 5 feet greater than the height and the width is 2 feet less than the height, what are the dimensions of the box?



$\sqrt{10}$

$\sqrt{10} + 5$

$\sqrt{10} - 2$