

Name: _____

Date: _____

Lesson 5 Assessment

1. Complete the following table. Use proper notation.

	$f(x) = 24(1.32)^x$	$f(x) = 3324(0.92)^x$	$f(x) = (1.04)^x$
Growth or Decay?			
Vertical Intercept			
Horizontal Intercept			
Domain			
Range			
Horizontal Asymptote (equation)			

2. Determine if each data set is linear or exponential, and write the formula for each.

x	$p(x)$
0	52
1	41
2	30
3	19

x	$g(x)$
0	128
1	64
2	32
3	16

x	$h(x)$
0	1000
1	1100
2	1210
3	1331

 $p(x) =$ _____ $g(x) =$ _____ $h(x) =$ _____

3. One 12-oz can of Dr. Pepper contains about 39.4 mg of caffeine. The function $A(x) = 39.4(0.8341)^x$ gives the amount of caffeine remaining in the body x hours after drinking a can of Dr. Pepper. Answer in complete sentences.
- a) How much caffeine is in the body eight hours after drinking one can of Dr. Pepper? Show all of your work and write your answer in a complete sentence. Round your answer to two decimal places as needed.
- b) How long after drinking one can of Dr. Pepper will only 1 mg of caffeine remain in the body? Show all of your work, and write your answer in a complete sentence. Round your answer to two decimal places as needed.
- c) Give the equation of the horizontal asymptote of $A(x)$. Explain the significance of the horizontal asymptote in this situation.