Algebra 1
Finding Exponential Models

Name _____

Hour _____

Find the exponential model for each of the follow.

1) (0, 2) and (3, 250) 1)_____

2) (3, 2048) and (5, 131072) 2)_____

3) (1, 72) and (4, 52488) 3)_____

4) (3, 0.15625) and (4, 0.0390625) 4)_____

5)

X	0	1	2	3	4
F(x)	5	15	45	135	405

5)_____

6)

X	3	4	5	6	7
F(x)	13.5	20.25	30.375	45.5625	68.34375

6)_____

7)

X	2	4	6	7	9
F(x)	96	1536	24576	98304	1572864

7)_____

8) A pharmaceutical company is testing a new anesthetic. They injected 14 mg of the anesthetic into the bloodstream of a laboratory rat and then monitored the level of the drug every hour. The results are in the table below.

Time (hr)	0	1	2	3	4	5	6	7	8	9
Anesthetic (mg)	14.00	9.38	6.28	4.21	2.82	1.89	1.27	.85	.57	.38

8)_____

9) *Multiple choice*. For which set of data below is an exponential model most appropriate? ***Explain why***.

9)_____

a.

x	0	1	2	3	4	5	6
y	3	18	75	390	1800	10,000	50,000

b.

x	0	1	2	3	4	5	6
y	3	15	75	375	1875	9375	46875

c.

x	0	1	2	3	4	5	6
y	3	6	99	732	3075	9378	23331

Name _____ Writing Exponential Models

1. Two exponential functions are modeled in the table below.

x	-2	-1	0	1	2	3
g(x)	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4

x	-2	-1	0	1	2	3
h(x)	$\frac{8}{9}$	$1\frac{1}{3}$	2	3	$4\frac{1}{2}$	$6\frac{3}{4}$

A. generate a function for g(x) _____

B. Generate a function for h(x) _____

C. What is the smallest integer value of x when h(x) < g(x) ? _____

D. graph the functions. Approximate where they intersect: