Name: _____ Date: _____

Exponential and Quadratic Regression

Ex 1: A rapidly growing bacterium has been discovered. The data in the following chart represents the number of bacteria in a sample each hour.

Hours	Bacteria Present
0	20
1	40
2	75
3	150
4	297
5	510

a) Write the linear model that represents the data and the correlation coefficient.

b) Write the exponential model that represents the data and the correlation coefficient.

c) Which model is the best fitting model? Explain.

d) Using the best fitting model, how much bacteria is present after 10 hours?

e) Using the best fitting model, how much bacteria is present after one day?

Ex 2: Amery recorded the distance and height of a basketball when shooting a free throw.

a) Find the quadratic equation for the relationship of the horizontal distance and the height of the ball. Round to 3 decimal places.

b) Using this function what is the approximate maximum height of the ball?

Distance(feet), x	Height (feet), f(x)
0	4
2	8.4
6	12.1
9	14.2
12	13.2
13	10.5
15	9.8