Name: _____

Chapter 4 – Section 4.2 Comparing Exponential and Linear Functions

TICKET-IN-THE-DOOR

In order to be prepared for class you must watch the module and complete the following activity. This is due first thing when you get to class.

The general formula for a **linear** function (in slope-intercept form) is _____.

The general formula for an **exponential** function is _____.

Check your understanding:

1. Determine whether the data is linear or exponential and explain why.

x	y
3	21.10
7	36.70
8	40.60
12	56.20

2. Write an exponential function $f(x) = a \cdot b^x$ where $f(0) = 2.5$ and $f(1) = 6.75$.

3. Write an equation for a function that satisfies these two points: $(0,2)$ and $(1,17)$ assuming that it's a:
   a) **Linear** function of the form $y = b + mx$

   b) **Exponential** function of the form $y = a \cdot b^x$.

4. In an effort to control John's disease in dairy cattle, the state of Minnesota set a goal to reduce the number of cattle with the disease from 16,555 in 1990 to 1,830 in by the year 2000.
   a) Assuming a **linear** model, what would the average rate of change be per year?

   b) Assuming an **exponential** model, what would be the decay factor needed?