NCM1B Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 5 Lesson 3.5 Homework: More Percent Growth**

**![C:\Documents and Settings\kkelley\Local Settings\Temporary Internet Files\Content.IE5\TBHO9DEA\MC900057354[1].wmf]()1. The Elk Population:** The table below shows the exponential growth of the elk population in a state forest.

|  |  |
| --- | --- |
| **Time (Year)** | **Population** |
| 0 | 30 |
| 1 | 57 |
| 2 | 108 |
| 3 | 206 |
| 4 | 391 |
| 5 | 743 |

![C:\Documents and Settings\kkelley\Local Settings\Temporary Internet Files\Content.IE5\TBHO9DEA\MC900057354[1].wmf]()a. What is the growth factor? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Explain.

b. What is the percent of growth? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **How did you find it?**

c. Write a NEXT- NOW rule you could use to predict the elk population ***p*** for any year ***n***after the elk were first counted.

d. Write an explicit equation in function notation to predict the elk population ***p*** for any year ***n***after the elk were first counted.

e. How many elk will there be after 10 years? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f. How many elk will there be after 15 years? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. At Lake Princeton, the growth of a trout population can be predicted by the given equation: ***p(n)* = 20 (1.095)*n***, where ***p(n)*** is the population and ***n***  is the number of months.

a. State the growth factor? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. What is the percent of growth? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Explain**.

c. What was the initial population? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. What will the population be after 15 months? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. Write a NEXT- NOW rule that could be used to predict the trout population.

|  |  |  |  |
| --- | --- | --- | --- |
| **Exponential Growth Equation** | **Initial Amount** | **Growth Factor** | **% of Growth** |
| $$y=30(1+.025)^{x}$$ |  |  |  |
| $$y=240(1.92)^{x}$$ |  |  |  |

3. Complete the Table: