HN Math III Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 2, Day 3 Homework Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ period \_\_\_\_\_

**Complete the following “Logical Arithmetic” problems based on your knowledge of exponent facts.**

1. Logical Arithmetic: If $5^{x}=125$, then x = \_\_\_\_.
2. Logical Arithmetic: If $10^{x}=1$, then x = \_\_\_\_.
3. Logical Arithmetic: If $11^{x}=121$, then x = \_\_\_\_.

**Logical Arithmetic can be shortened into the word: LogArithm!**

EXPLANATION:

LogArithm: base 2, (8)

IS ASKING … With base 2, what exponent gives you 8? So the answer to this question would be **3** (since 23 = 8).

Use the above information to complete the following

1. LogArithm: base 6, (1) = 5. LogArithm: base 2, (16) =

6. LogArithm: base 3, (81) = 7. LogArithm: base 5, $\frac{1}{25}=$

**Complete the following:**

1. 
2. The most recent virus that is making people ill is a fast moving one. Ten people are sick to begin, however, the virus is compounding continuously.

Write a function that models the virus’s growth over time.

If 30 people are sick on day 5, find the rate of growth.

1. 
2. 