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

**Unit 5 Lesson 3 Homework: Percent Exponential Growth**

**For each alien encounter below, write the explicit equation in function notation, f(x) =, and then solve.**

1. A population of alien bacteria grows by 35% every hour. If the population begins with 100 alien specimens, how many are there after 18 hours?
2. The population of the alien city, found on the dark side of the moon, has grown at a rate of 3.2% each year for the last 10 years. If the population 10 years ago was 25,000, what is the population today?
3. In 2010, the population of a monster city, called Halloween Town, was 50 monsters. Since then the population has increased at a constant rate of 25% every 2 years.
4. Assuming this rate of increase stays constant, what will the monster population of Halloween Town be in 4 years?
5. What will the population be in 20 years?

4. The [population](javascript:def('/Glossary/glossaryterm.aspx?word=Population',%20500,%20500);) in the town of Alien Acres is presently 42,500. The town has been growing at a steady [rate](javascript:def('/Glossary/glossaryterm.aspx?word=Rate',%20500,%20500);) of 2.7% every 4 years. What is the population of Alien Acres after 17 years?

**Review:**

5. An alien amoeba colony is growing exponentially and had a population of 10,000 when it was first observed. Three hours later, the population was 80,000.

1. What was the population six hours after it was first observed?
2. What will be the population in 10 hours?
3. In 3 days?