

Homework: More Alien Monster & Amoeba Encounters

Unit 10 Day 1

For each alien encounter below, write the explicit equation in function notation and then solve.

1. An alien amoeba colony is growing exponentially and had a population of 130 when it was first observed. An hour later, the population was 260. What was the population 10 hours after it was first observed?

Initial population =

population in 10 hrs =

Common ratio = $260 \div 130 = 2$

Explicit equation: $p(t) = 130(2)^x$

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? When do you think they will tell the human population of it's existence?

Initial population =

population in 10 years =

Common ratio = $(1 + .032)$

Explicit equation: $p(t) =$

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% each year. Assuming this rate of increase stays constant, what will the monster population of Halloween Town be in 4 years? In 20 years?

Initial population =

population in 4 years =

Common ratio =

population in 20 years =

Explicit equation: $p(t) =$

4. A population of alien bacteria grows by 35% every hour. If the population begins with 100 alien specimens, how many are there after 6 hours? How many will there be in 18 hours?

5. The population in the town of Alien Acres is presently 42,500. The town has been growing at a steady rate of 2.7%. Find the number of years ago that the population was 30,000.

