

Name: _____ Date: _____ Period: _____

Growing, Growing, Growing Assignment #2

1. Many single-celled organisms reproduce by dividing into two identical cells. Suppose an amoeba (uh MEE buh) splits into two amoebas every half hour (this means four amoebas every hour).

a. An experiment starts with one amoeba. Make a table showing the number of amoebas at the end of each *hour* over an 8-hour period.

Hours								
Amoebas								

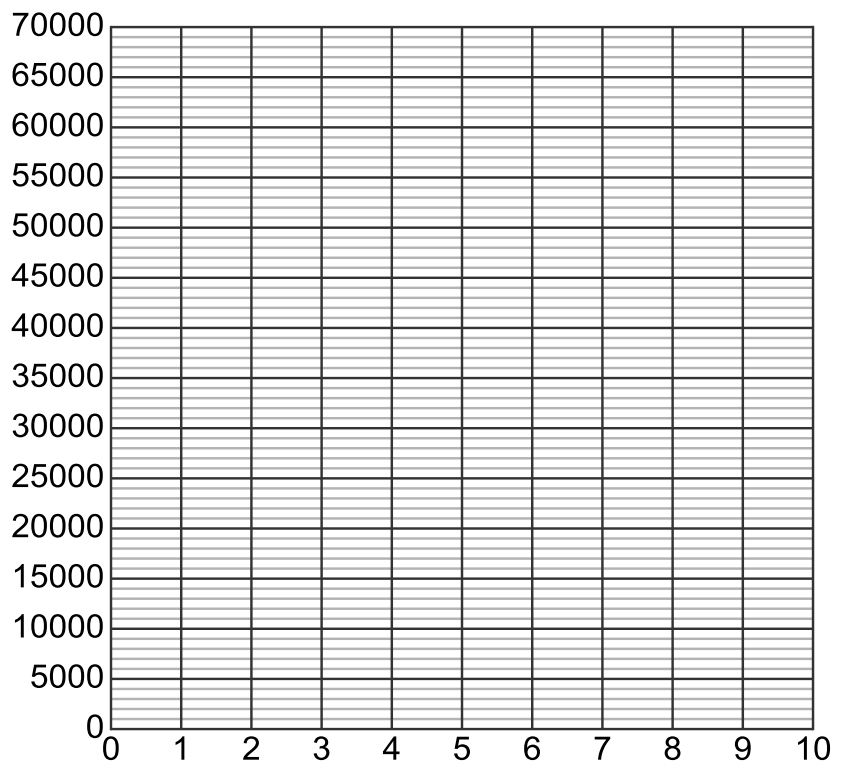
b. Write a recursive equation and an explicit equation for the number of amoebas a after t hours.

Recursive:

Explicit:

c. After how many hours will the number of amoebas reach one million?

d. Make a graph of the (time, amoebas) data from part (a).



Determine if the following sequences are arithmetic or geometric and give the common difference or common ratio.

2. 100, 80, 64, ...

Common ratio/difference=_____

3. 82, 76, 70, 64, ...

Common ratio/difference=_____

4. -49, -35, -21, -7, ...

Common ratio/difference=_____

5. $\frac{4}{9}$, 4, 36, ...

Common ratio/difference=_____

6a. Write an explicit equation for the n th term of the sequence -2, 10, -50, ...

6b. What is $f(11)$?

7a. Write an explicit equation for the n th term of the sequence 21, 13, 5, -3, ...

7b. What is $f(-1)$?

8a. Write a recursive equation for the n th term of the sequence -5, 12, 29, 46, ...

8b. What is $f(11)$?

9a. Write a recursive equation for the n th term of the sequence 512, 128, 32, ...

9b. What is $f(-1)$?

For Exercises 10-15, write the number in exponential form using 2, 3, 4, or 5 as the base.

10. 125

11. 64

12. 81

13. 3,125

14. 1,024

15. 4,096