NAME:_____ Period:_____ Score:_____/_____=_____%=_____

HW 4-3

Sec 1 Geometric Sequences: Recursive & Explicit Unit 4

For the following Geometric Sequences:

a) State the common ratio **b) Recursive equation** **c) Explicit equation**

1. -2, -10, -50, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

2. 36, 12, 4, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

3. 4, 12, 36, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

4. 400, 100, 25, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

5. -6, -42, -294, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

6. 1024, 128, 16, …

a) Common Ratio: _____

b) Recursive: _____

c) Explicit: _____

For the following Geometric Sequences:

a) Recursive equation **b) Explicit equation** **c) Find the given term of the geometric sequence**

7. 4, 8, 16, …

a) Recursive: _____

b) Explicit: _____

c) 11^{th} term: _____

8. -1, -3, -9, …

a) Recursive: _____

b) Explicit: _____

c) 9^{th} term: _____

9. 3, 6, 12, …

a) Recursive: _____

b) Explicit: _____

c) 13^{th} term: _____

10. $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$

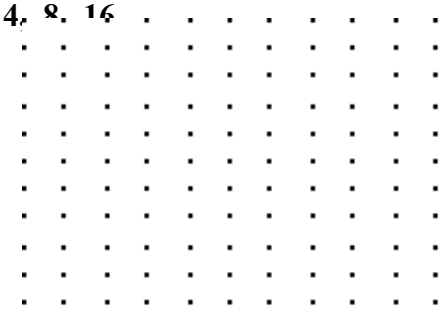
a) Recursive: _____

b) Explicit: _____

c) 5^{th} term: _____

Below you are given various types of information. Write the recursive and explicit functions for each geometric sequence. Finally, graph each sequence, making sure you clearly label your axes.

11. 2, 4, 8, 16

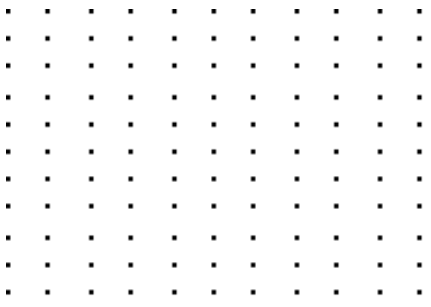


Recursive: _____

Explicit: _____

12.

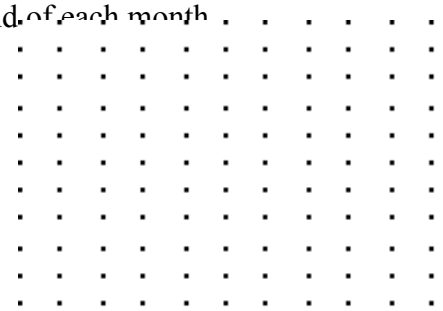
Time (days)	Number of cells
1	3
2	6
3	12
4	24



Recursive: _____

Explicit: _____

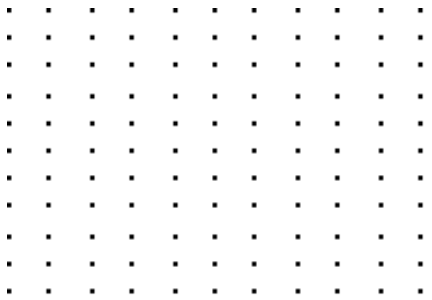
13. Claire has $300 in an account. She decides she is going to take out half of what's left in there at the end of each month.



Recursive: _____

Explicit: _____

14. Tania creates a chain letter and sends it to four friends. Each day each friend is then instructed to send it to four friends and so forth.



Recursive: _____

Explicit: _____

For questions 15-16:

a) Use the recursive equation to create the original sequence giving the first 5 terms.

b) Is the sequence arithmetic or geometric? Why?

15. $f(x) = f(x-1) + 9; \quad f(1) = 7$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____

16. $f(x) = f(x-1) \bullet 7; \quad f(1) = 2$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____

For questions 17-20:

a) Use the recursive equation to create the original sequence giving the first 5 terms.

b) Is the sequence arithmetic or geometric? Why?

17. $f(x) = f(x-1) - 1.2; \quad f(1) = -5$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____

18. $f(x) = 3f(x-1); \quad f(1) = -5$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____

19. $f(x) = f(x-1) - 7; \quad f(1) = -5$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____

20. $f(x) = \frac{1}{2} f(x-1); \quad f(1) = 12$

x	1	2	3	4	5
$f(x)$					

b) Arithmetic or Geometric? _____ Why? _____