

**Self Check #17, Sequences**

Given the first four numbers in each arithmetic sequence write a recursive and explicit formula:

1. -3, 3, 9, 12

Recursive

Explicit

2. 2, -5, -12, -19

Recursive

Explicit

Given the first four numbers in each geometric sequence write a recursive and explicit formula:

3. 32, 16, 8, 4

Recursive:

Explicit:

4. -5, 15, -45, 135

Recursive:

Explicit:

Give the following tables, answer the questions

5.

$x$	$f(x)$
1	6
2	15
3	24
4	33
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

6.

$x$	$f(x)$
1	1
2	4
3	9
4	16
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

7.

$x$	$f(x)$
1	6
2	18
3	54
4	162
5	$f(5)$

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

Give the following **Arithmetic Sequence**, fill out the table and answer the questions below.

x	0	1	2	3	4	n
y		3			12	.....

8. Explicit Rule: \_\_\_\_\_ Recursive Rule: \_\_\_\_\_

9. What is the 8<sup>th</sup> term in the sequence?

Give the following **Geometric Sequence**, fill out the table and answer the questions below.

x	0	1	2	3	4	n
y		8		128		.....

10. Explicit Rule: \_\_\_\_\_ Recursive Rule: \_\_\_\_\_

11. What is the 6<sup>th</sup> term in the sequence?

Determine the following and answer the questions

x	1	2	3	4	N
Y	512	256	128	64	.....

Linear or Exponential?

Arithmetic or Geometric?

12. Explicit Rule: \_\_\_\_\_ Recursive Rule: \_\_\_\_\_

13. What is the 8<sup>th</sup> term in the sequence?

Find the next four terms in each of the following sequences.

14.  $f(0) = -2, f(x + 1) = f(x) + 4$

15.  $f(0) = 1, f(x + 1) = f(x) \cdot (-4)$

What is the 8<sup>th</sup> term in the following sequences?

16.  $f(0) = 8, f(x + 1) = f(x) - 3$

17.  $f(0) = -1, f(x + 1) = f(x) \cdot 3$

18.  $f(x) = 5 \cdot 2^x$

19.  $f(x) = -6 + x \cdot 5$

20. Cal is collecting baseball cards. The following table shows how many cards Cal will have after each month.  
 After month 4, he had 23 cards, and after month 8, he had 35 cards. Fill in the table to show his monthly card collection total.

weeks	0	1	2	3	4	5	6	7	8	N
acorns					23				35	.....

How many cards did he start with?

When will he have more than 75 cards?

21. What is the 25<sup>th</sup> term of the sequence 8, 17, 26, 35, ...?
22. What is the 6<sup>th</sup> term of the geometric sequence which  $f(0) = 4$ ,  $f(x+1) = f(x) \cdot 3$ ?
23. List the first 4 terms of the sequence which  $f(x) = -3x + 17$
24. List the first 4 terms of the sequence which  $f(x) = -10(3)^x$ .
25. What is the 10<sup>th</sup> term of the arithmetic sequence which  $f(0) = 45$ ,  $f(x+1) = f(x) - 5$