We are grading this - work as a group

Module 1.9/1.10 **Arithmetic and Geometric Notes** **Name:**

What Comes Next? What Comes Later?

A Practice Understanding Task

For each of the following tables,

- describe how to find the next term in the sequence,
- write a recursive rule for the function,
- describe how the features identified in the recursive rule can be used to write an explicit rule for the function, and
- write an explicit rule for the function.
- identify if the function is arithmetic, geometric or neither

Function A

1. How to find the next term: _____
2. Recursive rule: _____
3. To find the n^{th} term: _____
4. Explicit rule: _____
5. Arithmetic, geometric, or neither? _____

x	y
1	5
2	10
3	20
4	40
5	?
…	…
n	?

Function B

6. How to find the next term: _____
7. Recursive rule: _____
8. To find the n^{th} term: _____
9. Explicit rule: _____
10. Arithmetic, geometric, or neither? _____

x	y
1	-8
2	-17
3	-26
4	-35
5	-44
6	-53
…	…
n	

Function D

11. To find the next term: _____
12. Recursive rule: _____
13. To find the n^{th} term: _____
14. Explicit rule: _____
15. Arithmetic, geometric, or neither? _____

x	y
1	3
2	15
3	27
4	39
5	51
6	?
…	…
n	?

Function F

16. To find the next term: _____
17. Recursive rule: _____
18. To find the n^{th} term: _____
19. Explicit rule: _____
20. Arithmetic, geometric, or neither? _____

x	y
0	3
1	4
2	7
3	12
4	19
5	?
…	…
n	?

Function G

21. To find the next term: _____
22. Recursive rule: _____
23. To find the n^{th} term: _____
24. Explicit rule: _____
25. Arithmetic, geometric, or neither? _____

x	y
1	10
2	2
3	$\frac{2}{5}$
4	$\frac{2}{25}$
5	$\frac{2}{125}$
6	$\frac{2}{625}$
…	…
n	

In each of the problems below I share some of the information that I know about a sequence. Your job is to add all the things that you know about the sequence from the information that I have given. Depending on the sequence, some of the things you may be able to figure out for the sequence are:

- a table;
- a graph;
- an explicit equation;
- a recursive formula;
- the constant ratio or constant difference between consecutive terms;
- any terms that are missing;
- the type of sequence;
- a story context.

a. I know that: the recursive formula for the sequence is $f(1) = -12,\ f(n) = f(n-1) + 4$

What do you know?

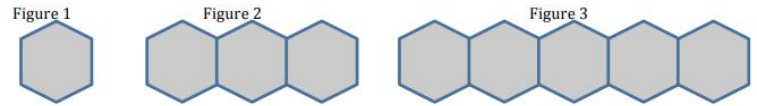
b. I know that: the first 5 terms of the sequence are 0, -6, -12, -18, -24 . . .

What do you know?

c. I know that: the sequence is arithmetic and $f(3) = 10$ and $f(7) = 26$

What do you know?

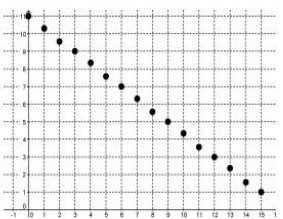
d. I know that: the sequence is a model for the perimeter of the following figures:



Length of each side = 1

What do you know?

e. I know that: a graph of the sequence is:



What do you know?

f. I know that: the sequence models the value of a car that originally cost $26,500, but loses 10% of its value each year.

What do you know?