

Math 1 Quiz 1.5-1.8

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Per: \_\_\_\_\_

Lydia has decided that she chews too much gum. She has decided she wants to cut back and will decrease the number of pieces every day. She records her progress in the chart below. Use the expanded table to help organize your thinking, if you need it.

# of Days	Pieces of gum
1	22
2	19
3	16
4	13

1. Does this table represent an arithmetic or a geometric sequence? How do you know?(3pts)

arithmetic, adding -3 each time

2. Write the recursive and explicit function for the given table(6pts):

Recursive: start: 22 Next = Now - 3 OR  $a_1 = 22$   $a_n = a_{n-1} - 3$

Explicit:  $a_n = 22 + (n-1)(-3)$   
 $f(n) = 22 + (n-1)(-3)$   $y = 22 + (x-1)(-3)$

3. How many pieces would she chew on day 7? Show your work! (2pts)

$$a_7 = 22 + (7-1)(-3) = 4$$

4	13
5	10
6	7
7	4

Classify: Classify each function on the left with its description on the right.(1pt each)

4. Next = Now · 4; start: 9 RG C

5.  $a_n = -4 + (n-1)25$  EA D

6.  $a_n = \frac{3}{2}(4)^{(n-1)}$  EG A

7. Next = Now + 6; start: 5 RA B

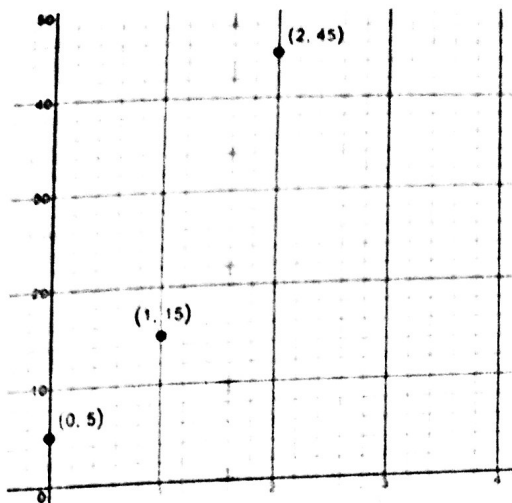
a. Geometric, Explicit

b. Arithmetic, Recursive

c. Geometric, Recursive

d. Arithmetic, Explicit

8. What is the explicit function that fits with the sequence shown below?(1pt)



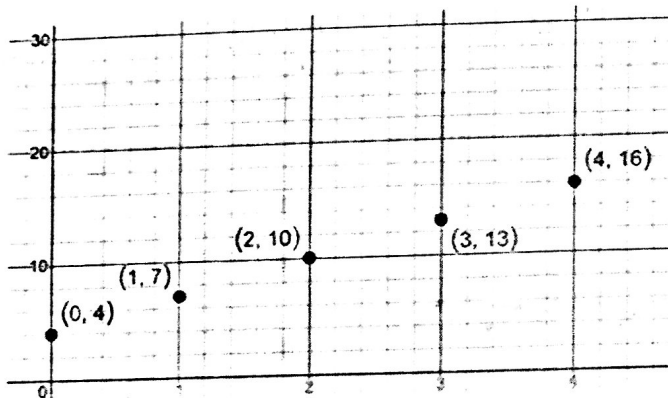
HINT: Identify where you start and how you are changing!

- a.  $a_n = 4 + (n - 1)3$
- b.  $a_n = 4(3)^{(n-1)}$
- c.  $a_n = 5 + (n - 1)3$
- d.  $a_n = 5(3)^n$

start → changing

0	5	> · 3
1	15	> · 3
2	45	

9. What is the recursive function that fits with the sequence shown in the graph below?(1pt)



Start: 4  
Next = Now + 3

- a. Next = Now · 3; start: 4
- b. Next = Now + 3; start: 4
- c. Next = Now · 3; start: 0
- d. Next = Now + 3; start: 0

0	4	> + 3
1	7	> + 3
2	10	> + 3
3	13	

10. The half-life of a 128 mg substance is 1 day. Fill in the rest of the table to show how much of the substance remains after each day. Then write the explicit formula for the sequence. (4pts)

n	0	1	2	3	4	5
f(n)	128	64	32	16	8	4

$r = \frac{1}{2}$        $a_n = a_1 \cdot r^n$   
Explicit:  $a_n = 128 \left(\frac{1}{2}\right)^n$