Name: _____ Date: _____

13.3 NOTES: Recursive Formulas Review Algebra 1

I. Sequence Notation

Subscript	a_{n-2}	a_{n-1}	a_n	a_{n+1}	a_{n+2}
Function	$f(n-2)$	$f(n-1)$	$f(n)$	$f(n+1)$	$f(n+2)$
Description		previous term	n^{th} term	next term	

II. Recursive Formulas

	Subscript Notation	Function Notation
Arithmetic Sequences		
Geometric Sequences		

III. Identify the sequence as being **arithmetic, geometric, or neither**; identify the **common difference or common ratio**; and then **write a recursive formula** that describes the sequence.

a. 5, 17, 29, 41, …

b. 256, 128, 64, 32, …

c. -4, -2, 1, 5, 10, …

IV. List the first 4 terms of the sequence described by the recursive formula.

a. $a_{n+1} = -5a_n$ where $a_1 = 1.5$ and $n \geq 1$

b. $f(n) = f(n-1) + 4$ where $f(5) = 10$ and $n \geq 2$

c. $f(n+1) = 4f(n) + 2$ where $f(1) = 1$ and $n \geq 1$

d. $a_n = 3a_{n-1} - 5$ where $a_1 = 5$ and $n \geq 2$

e. $a_n = a_{n-1} + (n-1)$ where $a_1 = 1$ and $n \geq 2$