

Name

7.5 ext

# Define Sequences Recursively

Alg I

I can write and graph recursively defined sequences.

Recursive Rule: Tells the 1<sup>st</sup> term in a sequence

Arithmetic:  $a_n = a_{n-1} + d$

Geometric:  $a_n = r \cdot a_{n-1}$

Ch. 7 Quiz

## Example 1:

1)  $a_1 = 0$     $a_n = a_{n-1} + 2$    2)  $a_1 = 10$     $a_n = a_{n-1} - 5$

$a_2 = 0 + 2 = 2$

$a_2 = 10 - 5 = 5$

$a_3 = 2 + 2 = 4$

$a_3 = 5 - 5 = 0$

$a_4 = 4 + 2 = 6$

$a_4 = 0 - 5 = -5$

$a_5 = 6 + 2 = 8$

$a_5 = -5 - 5 = -10$

## Example 2:

10)  $8, 28, 48, 68, 88$     $a_1 = 8$     $a_n = a_{n-1} + d$   
           $\downarrow$     $\downarrow$     $\downarrow$     $\downarrow$     $\downarrow$     $d = 20$     $\boxed{a_1 = 8; a_n = a_{n-1} + 20}$   
          +20   +20   +20   +20

12)  $0, -4, -8, -12, -16$     $a_1 = 0$   
           $\downarrow$     $\downarrow$     $\downarrow$     $\downarrow$     $\downarrow$     $d = -4$     $a_1 = 0; a_n = a_{n-1} - 4$   
          -4   -4   -4   -4