

Objective: Find the terms of a sequence given an explicit or recursive formula

**Recap:**

**Sequence** - list of ordered terms

**Series** - the sum of a sequence

**Explicit Formula** - gives you the  $n^{\text{th}}$  term

**Recursive Formula**- one or more previous terms are used to generate the next term

**Practice with Formulas**

1) Write the first 6 terms of the sequence defined by the explicit formula:  $t_n = -2n + 3$

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2) Write the first 6 terms of the sequence defined by the recursive formula:  $t_1 = 4$  and  $t_n = 3t_{n-1} + 5$

$$t_n = 3t_{n-1} + 5$$

$$t_1 = 4$$

$$t_2 = 3t_1 + 5 =$$

**HW: pg. 696 #11, 13, 16, 20, 23-25, 27, 29, 32 (due Friday)**

Kuta Software - Infinite Algebra 2

Name \_\_\_\_\_

## Introduction to Sequences

Date \_\_\_\_\_ Period\_

Find the next three terms in each sequence.

1) 1, -3, 9, -27, 81, ...

2) 9, 109, 209, 309, 409, ...

3) 0, 3, 8, 15, 24, ...

4)  $\frac{1}{2}, \frac{1}{2}, \frac{3}{8}, \frac{1}{4}, \frac{5}{32}, \dots$

5) 4, 16, 36, 64, 100, ...

6) 14, 34, 54, 74, 94, ...

7)  $5, \frac{5}{2}, \frac{5}{4}, \frac{5}{8}, \frac{5}{16}, \dots$

8) -9, 101, -999, 10001, -99999, ...

Find the tenth term in each sequence.

21)  $a_n = \frac{2n+1}{n^3}$

22)  $a_n = 4^{n-1}$

23)  $a_n = (2n)^2$

24)  $a_n = (2n-1)^2$

Find the first four terms in each sequence.

25)  $a_n = a_{n-1} + 10$   
 $a_1 = 29$

26)  $a_n = a_{n-1} \cdot 2$   
 $a_1 = -1$

27)  $a_n = a_{n-1} + n$   
 $a_1 = -4$

28)  $a_n = \frac{2 + a_{n-1}}{2}$   
 $a_1 = 10$