Math 4-624 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10-2 Arithmetic Sequences and Series

1. Describe the pattern in the sequences below:

a. 4, 7, 10, 13, … b. 14, 10, 6, 2, …

**Arithmetic sequence:**

**Constant Difference:**

2. a. Find the 10th term of the sequence 2, 6, 10, 14, 18, ...

b. What method did you use to get your answer?

c. What are the recursive formula and the explicit formula for this sequence?

d. Using the explicit formula, what is the 20th term of the sequence?

3. Find a50 when a1=7, d=5

# Arithmetic Sequence Formula:

Recursive: Explicit:

2. a) Find the sum of the first 100 natural numbers(no calcs!!)

b) What method did you use?

2. Describe the pattern in the sequences below:

1. 3, 9, 27, 81, ... b. 24, -12, 6, -3, ...

**Geometric Sequence:**

**Constant Ratio:**

Complete the table and find a general formula for the nth term of the geometric sequence.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | ... | n |
| t1 | t2 | t3 | t4 | ... | tn |
| 6 | 3 | 1.5 | 0.75 | ... | --------- |
| 6(0.5)0 | 6(0.5)1 |  |  |  |  |

**nth Term of a Geometric Sequence**

9. Find the 7th term of the sequence defined by t1=5 and tn=2tn-1

10. In a certain sequence, t2=2 and t5=16. Find t10 if the sequence is

a) arithmetic b) geometric