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

10-1 Sequences and Summation Notation

**Sequence:**

**Explicit Formula (finds the nth term just by substituting a value in for n)**

1. Write the first four terms of the sequence defined by the explicit formula an=2n2-1.
2. Write the first four terms of the sequence defined by an=4n+5.

3. Write the first four terms of an=(-3)n

**Recursive Formula (defines the nth term of a sequence as a function of the previous term)**

4. Write the first five terms of the sequence defined by:

 a1=-2

an=2an-1-1, where n>2.

5. a1=7 and an-1+4 for n2

6. a1=4 and an=2an-1+3 for n2

**Factorial Notation:**

(if n is a positive integer, the notation n! is the product of all positive integers from n down through 1. 0! = 1)

Evaluate each factorial expression:

7.  8. 

**Summation Notation:**

**(**the sum of the first n terms of a sequence is represented by the summation notation)

Find each indicated sum:

9.  10. 

Express each sum using notation:

11.  12. 

**EXTRA CREDIT**

Write a recursive formula for the sequence {5, 3, 1, -1, -3}