CSCI 1900 - Homework 4-B

**Section 2.4: Sequences** *(20 points)*

1. For the sequence 0, 4, 8, 12, 16, … (2)
	1. Give the set (by enumeration) that corresponds to this sequence
	2. Give the set (by specifying the properties of the elements) that correspond this this sequence
2. What are the first four terms (beginning with n=1) of the sequence whose general term is

 $a\_{n}= \left(n+1\right)^{2}$. (4)

1. What are the first four terms (beginning with n=1) of the sequence whose general term is

$b\_{1} = 3 , b\_{n}= 3b\_{n-1}-1$ (4)

1. For the each of following sequences, write a general formula for the *nth* term in the sequence. Identify your formula as explicit or recursive.
	1. 0, 2, 6, 12, 20, … (2)
	2. 0, 1, 0, 1, 0, … (2)
2. Write a recursive formula for the *nth* term in the following sequence.
 1, 3, 5, 11, 21, 43, 85, … (1)
3. Let *U = { 1, 3, 6, 7, 9, 10, 13, 16, 18 } B = { 6 } C = {1, 6, 9, 13 } D = { 3, 7, 9, 16 }*
	1. What is fB (6)? (1)
	2. What is fC (3)? (1)
	3. What is fC (-1)? (1)
	4. Find the sequences of length 9 that belong to fB , fC , fD . (1)
	5. Represent B U D, C U D, and C ∩ D with arrays of zeros and ones. (1)