TUTORIAL2: SEQUENCE

1) Find the value of sequence $\{a_n\}$ given a) $a_n = 2(-3)^n + 5^n$ and b) $a_n = a_{n-1} + 3n - 3$, $a_1 = 1$

   a) a_0 b) a_1 c) a_4 d) a_5

2) What is the value of a_8 in sequence $\{a_n\}$ if a_n is

   a) 2^{n-1} b) 7 c) $1 + (-1)^n$ d) $-(-2)^n$

3) Find the value of a_0, a_1, a_2 and a_3 for sequence $\{a_n\}$ where a_n is

   a) $2^n + 1$ b) $(n + 1)^{n+1}$ c) $\lfloor n/2 \rfloor$ d) $\lfloor n/2 \rfloor + \lceil n/2 \rceil$

4) In the following, write the first 4 value for the sequence. Also determine either it is an explicit or recursive.

   a) $a_n = 5^n$ b) $b_n = 3n^2 + 2n - 6$ c) $c_1 = 2.5$, $c_n = c_{n-1} + 1.5$

   d) $d_1 = -3$, $d_n = -2d_{n-1} + 1$

5) Let A = {ab, bc, ba}. Determine either strings below are valid strings in A*.

   a) abababab b) abc c) abba

   d) abbcbaba e) bcabbab f) abbbcba

6) List all string in X = {a, b} with length 2.

7) List all string in X = {a, b} with length 3 or less.