**CS 352 Spring 2018 -- Programming Assignment #3 (20 points)**

***Due date: Tuesday, April 10***

***Do both problem in both Python and Lisp.***

***Problem 1:*** Create a list of integer values with list size of 20 and values in the range [0, 100] randomly generated, and create another list of float values with list size of 20 and values in the range [10.0, 80.0] with values randomly generated.

**Problem 2:** Consider polynomials in one variable, **x** represented as lists of the monomials. Thus, if **(3 2)** represents the term and **(-1 0)** represents the term then the list **((3 2)(-1 0))** stands for the polynomial 

Here are some examples:

|  |  |  |
| --- | --- | --- |
| math notation | internal representation | printed output form |
|  | **Nil** | 0 |
|  | **((2 1)(1 0))** | + 2x + 1 |
|  | **((3 2)(-1 0))** | 2  + 3x - 1 |
|  | **((-4 1)(5 2)(1 0))** | 2  – 4x + 5x + 1 |
|  | **((7 14)(9 3)(-3 2)(7 1))** | 14 3 2  + 7x + 9x - 3x + 7x |

Write a function **WRITE-POLY**, which takes an internal representation of a polynomial and produces the appropriate printed output form. You may print xk as x^k.

***Required test cases:***

**NIL**

**((2 1) (1 0))**

**((3 2) (-1 0))**

**((5 2) (-4 1) (1 0))**

**((7 14) (11 13) (-3 2) (7 1) (-5 0))**

**((1 0) (2 1) (-5 3) (-3 1) (7 0))**