Laboratory Activity #4

In this activity you need to read about numpy.append on the internet. You can refer to this link: https://www.w3resource.com/numpy/manipulation/append.php

1.) Create a python program that will ask the user to input the values the elements of a 3x3 Matrix. Then store this values in a 2D array. (You don't have to use the numpy.append for this number)

a.) Print the diagonal of the matrix.

b.) Print the inverse of the matrix

c.) Print the determinant of the matrix

2.) Create a python program that will ask the user the degree of the polynomial and the values of the coefficients of the polynomial. Store the values of the component using numpy.append (Note you can use numpy.array([]) to create an empty array.) The print the following:

a. The roots of the polynomial

b. The derivative of the polynomial

c. The integration of the polynomial

3.) Create a python program that will ask the user to input the components of two vectors (Store the values of the component using numpy.append). Then calculate the following:

a. The dot product of the two vectors.

b. The cross product of the two vectors.

c. The magnitude of the cross product.

4.) Create a python program that will ask the user to input 10 floating-point number then store it in a 1D array using numpy.append. Calculate and print the following:

a.) The mean value of the elements in the array.

b.) Print the elements that are greater than 2.

c.) Print the first five highest values in the array in descending order (Hint: read more about sorted function).