Lab assignment 5

- Write a program to do the following operations on an integer array: (a) sum (b) mean (c) variance. Each of these operations should be performed by the functions defined below:

  `int Sum(int a[])`

  `float Mean(int a[])`

  `float Var(int a[])`

- Write a program to check if two input vectors are equal. The size and contents of both vectors must be accepted from the user. The program should also check if the vectors have the same dimension before attempting to check for equality.

- Develop a program to accept a 3x3 matrix from the user, and check if it is a magic square. In a magic square, the numbers in each row, column and diagonal add up to the same value. For example, the following is a 3x3 magic square (adding up to 15):

  2 7 6

  9 5 1

  4 3 8

- Write a program to compute the Euclidean distance between two vectors. The program should check if the vectors have the same dimension before attempting to compute the distance.