Problem #1
(10 marks)

Write a program that computes the variance of n integers. The variance of n integers can be defined by the following equation where $\bar{x}$ indicates the mean of the integers.

$$Variance = \frac{1}{n} * \sum_{i=1}^{i=n} (x_i - \bar{x})^2$$

As input, first you will be given an integer, `n`. Then there will be `n` integers. Print the variance of these integers up to 2 decimal points.

Sample Input(s)	Corresponding Output(s)
3 1 2 3	0.67
5 3 6 7 8 9	4.24

Problem #2
(10 marks)

Write a program to count the number of inversions of an array of integers. Inversion can be defined as the pairs of integers in an array of integers, which are in the reversed order than the order in which it will be if the array was sorted in ascending order. When an array is already sorted, there are 0 inversions, and in another case, the number of inversions will be maximum, if the array is completely in reverse order.

First take as input the number of integers in the array, `n`. Then read `n` integers. Print the number of inversions of the given array of integers.

Sample Input(s)	Corresponding Output(s)
5 1 5 6 4 9	2
8 3 6 1 2 9 8 1 8	11

Hint: If the array is sorted in ascending order, then every 5 and 6 must appear after 4. Whereas in the first example, the pair (5, 4) and (6, 4) are in reversed order. Therefore the inversion count is 2.