1. **Task :**   
Given an array, X of n integers, calculate the respective first quartile( Q1), second quartile(Q2) and third quartile(Q3)

**Input Format**

The first line contains an integer, n, denoting the number of elements in the array.   
The second line contains n space-separated integers describing the array's elements.

**Output Format**

Print 3 lines of output in the following order:

1. The first line should be the value of Q1
2. The second line should be the value of Q2
3. The third line should be the value of .Q3

2. **Task**   
Given an array,X , of N integers, calculate and print the standard deviation. Your answer should be in decimal form, rounded to a scale of 1 decimal place (i.e.,12.3 format).

I**nput Format**

The first line contains an integer, N, denoting the number of elements in the array.   
The second line contains N space-separated integers describing the respective elements of the array.

**Output Format**

Print the *standard deviation* on a new line, rounded to a scale of 1 decimal place

3 **Task**  
Given two n -element data sets,X and ,Y calculate the value of the Pearson correlation coefficient.

**Input Format**

The first line contains an integer, n, denoting the size of data sets and .   
The second line contains n space-separated real numbers (scaled to at most one decimal place), defining data set X .   
The third line contains space-separated real numbers (scaled to at most one decimal place), defining data set Y.

**Output Format**

Print the value of the Pearson correlation coefficient, rounded to a scale of 3 decimal places.

4 **Task**   
You have a sample of 100 values from a population with mean μ=500 and with standard deviation σ = 80. Compute the interval that covers the middle 95% of the distribution of the sample mean; in other words, compute A and B such that P(A< x < B) . Use the value of .z=1.96 Note that is the [z score](https://en.wikipedia.org/wiki/Standard_score).

**Input format:**

The first line contains the sample size. The second and third lines contain the respective mean (μ) and standard deviation (σ). The fourth line contains the distribution percentage we want to cover (as a decimal), and the fifth line contains the value of z

**Output Format**

Print the following two lines of output, rounded to a scale of 2 decimal places.

1. On the first line, print the value of A .
2. On the second line, print the value of B .

5 **Task**  
Given two n-element data sets, X and Y, calculate the value of Spearman's rank correlation coefficient.

**Input Format**:

The first line contains an integer, n, denoting the number of values in data sets X and Y .   
The second line contains n space-separated real numbers (scaled to *at most* one decimal place) denoting data set X.   
The third line contains n space-separated real numbers (scaled to *at most* one decimal place) denoting data set Y.

**Output Format**

Print the value of the Spearman's rank correlation coefficient, rounded to a scale of 3 decimal places.

6. What is correlation and covariance in statics?

7. What is difference between type l and type ll error?

8. match these:

A) standard deviation 1) The left tail is shorted than the right tail

B) Right skewed  2)

C) variance 3) The right tail is shorted than the right tail

D) Left skewed 4)

9 A test is administered annually. The test has a mean score of 150 and a standard deviation

Of 20. If Ravi’s z-score is 1.50, what was his score on the test?

10. Mention one method to find outliers.