Final Examination

Practical Question Paper

PRF192 # Programming Fundamentals using C

Semester: SU20

Curriculum Code: Software Engineering

Date: 28/07/2020

Duration: 90 Minutes

Total Marks: 30

Do not write on this question paper and return it to the Invigilator after the examination.

A. Square number

In mathematics, a square number or perfect square is an integer that is the square of an integer; in other words, it is the product of some integer with itself. For example, 9 is a square number, since it can be written as 3 * 3.

Your task is to write a program that check whether a number is squared number or not.

Input

The input starts with an integer T ($1 \leq T \leq 100$) indicating the number of test cases.

Each of the next N lines specify one test case, consisting of the integer N ($0 \leq N \leq 2*10^9$) is the number to check.

Output

For each case, print on a single line the result "Yes" if N is the perfect square, otherwise it is "No".

Sample

Sample Input 1	Sample Output 1
5	Yes
3600	No
15	No
6	Yes
81	Yes
1	

Sample Input 2	Sample Output 2
5	Yes
4	Yes
36	No
22	Yes
0	No
1000	

Sample Input 3	Sample Output 3

5	No
2020	Yes
3481	Yes
900	No
101	Yes
121	

B. Highest mountain

To attract tourists while retaining the natural beauty, the government of the TPF islands is building Eco-tourism facilities. To diversify the type of tourism, the government is exploring the geology to find the highest mountain on the largest island OLIVOH. The government hired a topographic survey of this island. Geologists have scanned the island to show the topography of the island. Statistics are presented as a series of integers representing the height of the terrain:

- If the number is negative, this is a river or lake.

- The land is, in contrast.

Mountains are high terrain and not submerged under water.

It means $a_{i-1} < a_i$ and $a_i > a_{i+1}$ and $a_i > 0$.

For example, if the topography of the island is:

3 2 **4** 0 3 4 **6** -1 -1 -4 -3 0 1 1 1 2 4 4 5 **9** 8 7 1 2

After the analysis, the highest mountain on the island has a height of 9.

Your task is to find the altitude of the highest mountain on the island OLIVOH. In case the island has no mountains, print the value 0.

Input

- The first line contains an integer N ($1 \le N \le 100$).

- The second line, containing N integers a_0, a_1, ..., a_{N-1} ($1 \le i \le N$, $-2 * 10^9 \le a_i \le 2 * 10^9$).

Output

An integer that is the height of the highest mountain on the island OLIVOH.

Sample

Sample Input 1	Sample Output 1
15 5 2 9 -3 0 -6 -2 1 2 8 3 18 1 5 2	18

Sample Input 2	Sample Output 2
15 9 2 5 5 3 0 -6 -9 -1 -4 1 2 8 9 9	0

Sample Input 3	Sample Output 3
15	0

| 7 7 7 2 2 -6 -8 -9 -1 -5 0 0 6 6 6 | |

C. Change case

Write a program that allows you to accept a sentence and then convert the whole sentence into lowercase.

Input

Contains the sentence. Sentences with up to 200 characters.

Output

Sentences have been standardized as required.

Sample

Sample Input 1	Sample Output 1
David Luke	david luke

Sample Input 2	Sample Output 2
ThE test IS 15 pLuS 3 IS 18	the test is 15 plus 3 is 18

Sample Input 3	Sample Output 3
Master.CplusPLUS@fPt.EdU.VN	master.cplusplus@fpt.edu.vn