Codeforces Alpha Round #20 (Codeforces format)

A. BerOS file system

time limit per test: 2 seconds
memory limit per test: 64 megabytes
input: standard input
output: standard output

The new operating system BerOS has a nice feature. It is possible to use any number of characters `'/'` as a delimiter in path instead of one traditional `'/'`. For example, strings `//usr///local//nginx/sbin//` and `/usr/local/nginx///sbin` are equivalent. The character `'/'` (or some sequence of such characters) at the end of the path is required only in case of the path to the root directory, which can be represented as single character `'/'`.

A path called normalized if it contains the smallest possible number of characters `'/'`.

Your task is to transform a given path to the normalized form.

Input
The first line of the input contains only lowercase Latin letters and character `'/'` — the path to some directory. All paths start with at least one character `'/'`. The length of the given line is no more than 100 characters, it is not empty.

Output
The path in normalized form.

Sample test(s)

input
`//usr///local//nginx/sbin`
output
`/usr/local/nginx/sbin`

B. Equation

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given an equation:

$$Ax^2 + Bx + C = 0.$$

Your task is to find the number of distinct roots of the equation and print all of them in ascending order.

Input

The first line contains three integer numbers A, B and C ($-10^5 \le A, B, C \le 10^5$). Any coefficient may be equal to 0.

Output

In case of infinite root count print the only integer `-1`. In case of no roots print the only integer `0`. In other cases print the number of root on the first line and the roots on the following lines in the ascending order. Print roots with at least 5 digits after the decimal point.

Sample test(s)

input
1 -5 6
output
2 2.0000000000 3.0000000000

C. Dijkstra?

time limit per test: 1 second
memory limit per test: 64 megabytes
input: standard input
output: standard output

You are given a weighted undirected graph. The vertices are enumerated from 1 to n. Your task is to find the shortest path between the vertex 1 and the vertex n.

Input

The first line contains two integers n and m ($2 \le n \le 10^5$, $0 \le m \le 10^5$), where n is the number of vertices and m is the number of edges. Following m lines contain one edge each in form a_i, b_i and w_i ($1 \le a_i, b_i \le n$, $1 \le w_i \le 10^6$), where a_i, b_i are edge endpoints and w_i is the length of the edge.

It is possible that the graph has loops and multiple edges between pair of vertices.

Output

Write the only integer `-1` in case of no path. Write the shortest path in opposite case. If there are many solutions, print any of them.

Sample test(s)

input

```
5 6
1 2 2
2 5 5
2 3 4
1 4 1
4 3 3
3 5 1
```

output

```
1 4 3 5
```

input

```
5 6
1 2 2
2 5 5
2 3 4
1 4 1
4 3 3
3 5 1
```

output

```
1 4 3 5
```