System Solver

Time limit: 1.0s **Memory limit:** 16M

A system of linear equations is a collection of linear equations involving the same set of variables. A general system of m linear equations with n unknowns can be written as:

$$\begin{array}{rcrcrcr} a_{11}x_1 & + & a_{12}x_2 & + \cdots + & a_{1n}x_n & = & b_1 \\ a_{21}x_1 & + & a_{22}x_2 & + \cdots + & a_{2n}x_n & = & b_2 \\ \vdots & & \vdots & & \vdots & & \vdots \\ a_{m1}x_1 & + & a_{m2}x_2 & + \cdots + & a_{mn}x_n & = & b_m. \end{array}$$

Here, $x_1, x_2, \ldots, x_n$ are the unknowns, $a_{11}, a_{12}, \ldots, a_{mn}$ are the coefficients of the system, and $b_1, b_2, \ldots, b_m$ are the constant terms. (Source: Wikipedia)

Write a program that solves a system of linear equations with a maximum of 100 equations and variables.

Input Specification

Line 1 of the input contains integers n and m $(1 \le n, m \le 100)$, indicating the number of variables to solve for and the number of equations in the system.
The next m lines will each contain $n+1$ integers, where the first n integers are the coefficients of the equation and the last integer is the constant term.
Every number in the input is guaranteed to have absolute value at most 10^6.

It is guaranteed that the input is generated randomly. Specifically, for each test case, n and m will be picked arbitrarily, and so will two other integers, l and r. Then, all other values in the input will be integers picked uniformly at random between l and r.

Output Specification

If the system can be solved, output n lines, the values of the unknowns $x_1, x_2, \ldots, x_n$. Your solution will be considered correct if each value has at most 10^{-5} absolute or relative error. If there are no solutions to the system, or if there are infinite solutions to the system, output `NO UNIQUE SOLUTION`.

Sample Input 1

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

Sample Output 1

```
2
0.66667
```

Explanation for Sample Output 1

This asks for the solution(s) for x in the system:

$$\begin{cases} x + 3y = 4 \\ 2x + 3y = 6 \end{cases}$$

Solving for x in the first equation gives $x = 4 - 3y$. Substituting this into the 2-nd equation and simplifying yields $3y = 2$.
Solving for y yields $y = \frac{2}{3}$. Substituting y back into the first equation and solving for x yields $x = 2$.
Therefore the solution set is the single point $(x, y) = (2, \frac{2}{3})$.

Sample Input 2

```
2 3
6 2 2
12 4 8
6 2 4
```

Sample Output 2

```
NO UNIQUE SOLUTION
```

Explanation for Sample Output 2

All of the lines are parallel. Therefore, the system of equations cannot be solved.