Goal

Today, you are likely to win the modest sum of € 10,000. And thanks to the currency market, you can make them grow to enrich you even more! By performing the following exchanges:

- your 10000 euros against 300000 old francs
- these 300000 old francs against 5000 rubles
- these 5000 rubles against 12000 euros

You end up with 12000 €! (Do not try at home, the organizers are not responsible for any loss of money related to the conversion of your prices into old francs.)

You are given the exchange rate between **N** currencies in the form of an **N** × **N** table where the value in cell of the **j**th column of row **i** tells you how many currency unit **j** you can get against 1 unit of currency number **i**.
The euro is always the first currency, you start with 10000 euros, what is the maximum number of euros you can get by performing at most **M** exchanges?

Data

Input

Row *1:* two integers **N** and **M** between *2* and *20,* the number of currencies followed by a space then the number of exchanges allowed.
Rows *2* to **N** + 1: on the **i**th row, a list of **N** decimal numbers separated by spaces. Each number is between *0.01* and *100* with not more than two digits after the dot. The **j**th number represents the amount of currency **j** that can be obtained in exchange for a unit of currency **i**. You are guaranteed that the **i**th number of the **i**th row is always 1 (you can exchange 1 currency unit against itself).

The maximum number of euros that can be obtained after **M** exchanges, we guaranty that the answer is always between *10000* and *1000000*. We will accept the usual representations of the floats (*123456.789*, *1.23456789e+5*, etc.). To avoid any problem related to the precision of floating point numbers, we accept answers with a margin of error of 1 €.

Example

```
3 8
1 0.5 1.2
2 1 3
0.8 0.3 1
```

The first currency is always the euro (€), assuming that the next two are the dollar ($) and the yen (¥), you can perform the following exchanges:
- 10000 € against 5000 $
- $ 5,000 against 15,000 yen
- 15000 ¥ against 12000 €
- 12000 € against 6000 $
- $ 6,000 against 18,000 yen
- 18000 ¥ against 14400 €

You will then only made 6 exchanges out of the 8 allowed, but it is not possible to earn more euros with your 2 remaining exchanges, the expected answer is *14400*. Other accepted answers would be *14.4e + 3* or even *14401* (because it's within the margin of error of 1 €).

You can download sample input and output data files to work locally by clicking on the link at the bottom of the French version of the question

Téléchargez des fichiers d'exemple ainsi qu'un modèle de code pour travailler localement.