FatMouse' Trade

Time Limit: 2000/1000 MS (Java/Others) Memory Limit: 65536/32768 K (Java/Others)
Total Submission(s): 62320 Accepted Submission(s): 21019

Problem Description

FatMouse prepared M pounds of cat food, ready to trade with the cats guarding the warehouse containing his favorite food, JavaBean.
The warehouse has N rooms. The i-th room contains J[i] pounds of JavaBeans and requires F[i] pounds of cat food. FatMouse does not have to trade for all the JavaBeans in the room, instead, he may get J[i]* a% pounds of JavaBeans if he pays F[i]* a% pounds of cat food. Here a is a real number. Now he is assigning this homework to you: tell him the maximum amount of JavaBeans he can obtain.

Input

The input consists of multiple test cases. Each test case begins with a line containing two non-negative integers M and N. Then N lines follow, each contains two non-negative integers J[i] and F[i] respectively. The last test case is followed by two -1's. All integers are not greater than 1000.

Output

For each test case, print in a single line a real number accurate up to 3 decimal places, which is the maximum amount of JavaBeans that FatMouse can obtain.

Sample Input

```
5 3
7 2
4 3
5 2
20 3
25 18
24 15
15 10
-1 -1
```

Sample Output

```
13.333
31.500
```

Author

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Source

ZJCPC2004

Recommend

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