You are given natural numbers and . You have a dice with sides . When you row it each side has a probability of of occuring. On each roll you win the result of the die or you can roll again. On the -th roll in a row, you cannot roll again and you win as much as the result of the dice.

What is your maximal expected profit?

**Input**

The only line of the file **dice.in** contains the numbers and .

**Output**

Print the answer in the file **dice.out**. The answer will be considered as correct if the absolute or relative error is

**Constraints**

**Time limit: 0.2 sec.**

**Memory limit: 256 MB.**

**Sample test**

|  |  |
| --- | --- |
| **Input (dice.in)** | **Output (dice.out)** |
| 2 3 | 1.875000000000000000 |