Financial Freedom

Mr. Tan aims to earn **X** VND before retiring. Upon retirement, he plans to put the entire **X** VND into a safe investment with a stable monthly return of **r%**. At the end of the first month, he plans to withdraw **Y** VND for expenses. Due to the impact of inflation with an monthly rate of **f%**, in the following months, he will withdraw an amount of money that ensures a standard of living equivalent to the **Y** VND from the first month of retirement. Mr. Tan wants to ensure that he has enough money to spend for at least **N** months (i.e. Mr. Tan withdraws **N-1** times).

Input

The only line contain 2 real numbers **r** and **f**, and 2 integers **Y** and **N**

Output

Calculate **X** (rounded to 4 decimal places)

Sample

Input	Output
0.6 0.25 20 400	4291.8397