

Installment Purchase

Huy needs to buy a laptop in the form of installment payment. The employee of XXX company told Huy that he only needs to pay N VND in advance, and M VND per month for the next T months

For example, a laptop costs 20 million, Huy can pay 5 million in advance, and pay 2 million every month in the next 8 months. The total amount Huy has to pay is 21 million. The store employee said that such interest rate was only 5% for 8 months.

Huy knows that if at the n -th month, the remaining debt is X , then at $(n + 1)$ -th month the debt will be $X * (1 + r) - G$. Where r is the monthly interest rate, and G is the money monthly payment.

Help Huy write a program to calculate the real interest rate for this purchase.

Input

The first line contains the number V , the actual value of the item, and T is the number of months in installment.

The second line includes N and M .

$(1 \leq V, N, M \leq 10^9, 1 \leq T \leq 60)$

Output

Print interest rounded to 3 decimal places.

Sample

Input	Output
20000000 8	0.015
5000000 2000000	