Passbook Withdrawal

Nam has a passbook (sổ tiết kiệm) of **X** VND with an interest rate of **r1% per year** and a term of **n** months. Interest is calculated at the end of the term. After **m** months (m < n), Nam wants to withdraw money from the passbook to build a house. After researching, Nam has discovered two options:

- Option 1: settle the passbook and receive only the full principal amount.

- Option 2: Use the passbook as collateral (passbook loan) to borrow money from a bank with a value of Y VND and an interest rate of **r2% per year**. Interest is calculated annually (if n – m ≥ 12), or until the passbook is settled at month **n**. **Note** that in this case, Nam will use all amount of money he receives from his passbook after month **n** to pay off this loan.

Calculate the **maximum amount of money** Nam can withdraw from the passbook (X) or borrow from the bank (Y).

Input

The only line contains 3 integers **X**, **n** and **m**, followed by 2 real numbers **r1** and **r2** ($0 < \mathbf{X} \le 10^{15}$, $0 < \mathbf{m} < \mathbf{n} \le 300$, $0 < \mathbf{r1}, \mathbf{r2} \le 20$).

Output

The maximum amount of money (rounded to unit).

Sample

Input	Output
100000000 12 10 7 8.5	105505341
100000000 12 2 7 8.5	100000000