EIUSAVING 3

Normally, interest rates for saving deposits depend on how long the deposits are (see the table below).

Number of months	Interest rates (each 12 months)
1	3.90%
2	3.92%
3	3.95%
4	3.99%
5	4.04%
6	5.54%
7	5.72%
8	5.92%
9	6.14%
10	6.38%
11	6.64%
12	6.92%

Minh monthly deposits the same amount of money (Dong) into a savings account. Interest will be added to account at the end of each month (not round).

He wants to receive N (Dong) after M months. Calculate the amount of money Minh should deposit into his account.

Input

The first line contains 2 integers N, M ($0 < N \le 10^{15}$, $0 < M \le 1000$).

Output

The required amount of money (round to 4 decimals places). (Allow relative error of 10^{-2})

Sample

Input	Output
70000 4	17356.9857