Installment purchase

You bought a laptop which costed N VND and you need to pay X VND per month for M months. In the Kth month, you want to pay the remaining cost, how much you need to pay? Please note that the store applies the same interest rate on the remaining cost every month (before you pay) and the interest rate has four decimal places.

Input

The first line contains four integer N, X, M, K ($n \leq 10^5$)

Output

The amount of money you need to pay (rounded to nearest integer)

Sample

Input	Output
10 1 12 5	7
10 1 15 10	5
100 10 24 10	89