Retirement 2

Quynh has recently launched a new business, and it's thriving. She now wants to plan for her financial freedom. Here are the details:

1. Quynh estimates her income for the next **N months** as M_i, where **i** ranges from **0** to **N-1**.
2. After receiving her monthly profit, Quynh spends **X** USD on expenses. The monthly expenses increase according to an annual inflation rate of **f%**.
3. Quynh invests the surplus amount each month with an annual interest rate of **r%**.

1. Her goal is to accumulate enough money to sustain her lifestyle for the next **100 years (1200 months from starting her work)**

Help Quynh calculate the maximum initial amount X_0 (in USD) that Quynh may spend.

Input:

- The first line contains three values: **N** (number of months of work), **r%** (annual interest rate), and **f%** (annual inflation rate).
- The second line consists of **N** space-separated values representing Quynh's monthly salary: M_i for **i = 0, 1, …, N-1**.

Output:

Print the value of X_0. The result is rounded down in units.

Sample

Input	Output
12 5.2 3.6 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000	1952
10 3 2 119879 251746 396800 556359 731874 924940 1137313 1370924 1627895 1910564	11701