Practice Problem A: One Step Analysis

When analysing discrete differential equations of a certain form, the following equation is sometimes used to bound the size of the nth element:

$$Z_n \leq aZ_{n-1} + b$$

for non-negative constant reals a and b (all elements of Z must also be non-negative). Proofs involving this formula are said to use "one step analysis".

You will be given non-negative reals a, b, and Z_0. Find an upper bound on the nth element of Z.

Input Specification:

The input consists of a series of no more than 100 test cases, one per line. For each test case, first there will be three non-negative real numbers a, b, and Z_0, where $|a|, |b|, |Z_0| \leq 25$. Then follows a non-negative integer $n \leq 5$. Input ends on EOF.

Output Specification:

Output to three decimal places (rounded) the upper bound on Z_n.

Sample Input:

```
1 2 3 4
2 1 5 1
3 2 3 1
```

Sample Output:

```
11.000
11.000
11.000
```