Fibonacci Modified

A series is defined in the following manner:

Given the n^{th} and $(n+1)^{th}$ terms, the $(n+2)^{th}$ can be computed by the following relation
$\mathbf{T_{n+2} = (T_{n+1})^2 + T_n}$

So, if the first two terms of the series are 0 and 1:
the third term = $1^2 + 0 = 1$
fourth term = $1^2 + 1 = 2$
fifth term = $2^2 + 1 = 5$
... And so on.

Given three integers **A**, **B** and **N**, such that the first two terms of the series (1^{st} and 2^{nd} terms) are **A** and **B** respectively, compute the N^{th} term of the series.

Input Format

You are given three space separated integers **A, B and N** on one line.

Input Constraints
0 <= **A,B** <= 2
3 <= **N** <= 20

Output Format

One integer.
This integer is the $\mathbf{N^{th}}$ term of the given series when the first two terms are **A** and **B** respectively.

Note

- Some output may even exceed the range of 64 bit integer.

Sample Input

```
0 1 5
```

Sample Output

```
5
```

Explanation

The first two terms of the series are 0 and 1. The fifth term is 5. How we arrive at the fifth term, is explained step by step in the introductory sections.