

# Fibonacci Modified

A series is defined in the following manner:

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

$$T_{n+2} = (T_{n+1})^2 + T_n$$

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 ( $1^{\text{st}}$  and  $2^{\text{nd}}$  terms) are **A** and **B** respectively, compute the  $N^{\text{th}}$  term of the series.

## Input Format

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

## Input Constraints

$$0 \leq A, B \leq 2$$

$$3 \leq N \leq 20$$

## Output Format

One integer.

This integer is the  $N^{\text{th}}$  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.