



# Fibonacci Modified

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Problem

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We define a *modified Fibonacci sequence* using the following definition:

Given terms  $t_i$  and  $t_{i+1}$  where  $i \in [1, \infty)$ , term  $t_{i+2}$  is computed using the following relation:

$$t_{i+2} = t_i + (t_{i+1})^2$$

For example, if term  $t_1 = 0$  and  $t_2 = 1$ , term  $t_3 = 0 + 1^2 = 1$ , term  $t_4 = 1 + 1^2 = 2$ , term  $t_5 = 1 + 2^2 = 5$ , and so on.

Given three integers,  $t_1$ ,  $t_2$ , and  $n$ , compute and print term  $t_n$  of a *modified Fibonacci sequence*.

**Note:** The value of  $t_n$  may far exceed the range of a 64-bit integer. Many submission languages have libraries that can handle such large results but, for those that don't (e.g., C++), you will need to be more creative in your solution to compensate for the limitations of your chosen submission language.

## Input Format

A single line of three space-separated integers describing the respective values of  $t_1$ ,  $t_2$ , and  $n$ .

## Constraints

- $0 \leq t_1, t_2 \leq 2$
- $3 \leq n \leq 20$
- $t_n$  may far exceed the range of a 64-bit integer.

## Output Format

Print a single integer denoting the value of term  $t_n$  in the modified Fibonacci sequence where the first two terms are  $t_1$  and  $t_2$ .

## Sample Input

```
0 1 5
```

## Sample Output

```
5
```

## Explanation

The first two terms of the sequence are  $t_1 = 0$  and  $t_2 = 1$ , which gives us a modified Fibonacci sequence of  $\{0, 1, 1, 2, 5, 27, \dots\}$ . Because  $n = 5$ , we print term  $t_5$ , which is 5.



Submissions: [61459](#)




Max Score: 45

Difficulty: Medium

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Java 7   

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8     public static void main(String args[] ) throws Exception {
9         /* Enter your code here. Read input from STDIN. Print output to STDOUT */
10    }
11 }
12
```

Line: 1 Col: 1

 [Upload Code as File](#) ☐ Test against custom input

Run Code

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