

Formula

time limit per test: 1 second (5 seconds for Python)

memory limit per test: 256 megabytes

input: standard input

output: standard output

points: 100 · problem code: formula · author: jbroeksteeg

Lindra has found the formula to eternal life! Unfortunately, they have also proved that no closed form exists, and therefore they are not too sure how to solve it. The formula is recursive, of the form $F(0) = a$, $F(1) = b$, $F(n) = a \times F_{n-1} + b \times F_{n-2}$. If they are able to find the value of $F(k)$, Lindra will surely be able to achieve immortality. As Indra's PHD supervisor, can you help them find this value?

Since this value can be quite large, output it modulo 1000000007 .

Input Format

The input will consist of the three integers from the description on one line, a , b and k .

Output Format

The output should consist of a single integer, the value of $F(k)$ modulo $1e9 + 7$.

Sample Input

```
1 2 4
```

Sample Output

```
16
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Sample Explanation

This sample corresponds to the powers of two. $F(0) = 1$, $F(1) = 2$, $F(2) = 4$, $F(3)=8$, $F(4)=16$, etc

Constraints

$$1 \leq a, b \leq 1e3$$

$$1 \leq k \leq 1e5$$