

Modified Fibonacci Series



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 recurrence relation:

$$t_{i+2} = 2 * t_{i+1} + t_i$$

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

Given three integers t_1, t_2 and n , compute the n^{th} term t_n of the modified *Fibonacci* sequence and print $t_n \% (10^9 + 7)$.

Note: The value of t_n may far exceed the range of a **64-bit** integer.

Input Format

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

Constraints

- $0 \leq t_1, t_2 \leq 2$
- $1 \leq n \leq 100$

Output Format

Print a single integer denoting the value of $t_n \% (10^9 + 7)$ in the modified *Fibonacci* sequence where the first two terms are t_1 and t_2 .

Sample Input 0

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0 1 5
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Sample Output 0

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12
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