

pB 疊加態

題目敘述

小邱是一個黑暗調酒師，但因為他最近調太多酒了，所以引起了成大資訊系的學生不滿 QQ 於是他決定改去玩量子物理

專業的小邱決定進行疊加態的人體實驗

實驗的最一開始會有兩堆，分別有 X 跟 Y 人

實驗總共會進行 N 輪，每一輪都會將前兩堆人關進薛丁格的箱子之中並產生出新的一堆 第 i 堆會有 $F(i)$ 人，並且

$$\begin{cases} F(1) = X \\ F(2) = Y \\ F(i) = a \times F(i-1) + b \times F(i-2) \end{cases}$$

請你幫小邱計算出他的實驗結束時，最後一堆有多少人 (也就是 $F(N)$ 的值)

另外，由於參預實驗的人數可能十分眾多，所以請你輸出答案除以 $10^8 + 7$ 之後的餘數

English Version:

Chiu is a dark bartender. However, he has made too many cocktails and students in department of CS in NCKU are quite MAAAAD about it. Chiu then decided to play around with some quantum physics. As a professional physicist, he started an experiment on superposition state on human body. At the beginning of the experiment, there will be two piles of people, numbers of them are X and Y . The experiment will go for N round. Each round the two piles of people will be put into Schrödinger's box and produce a new pile of people.

$$\begin{cases} F(1) = X \\ F(2) = Y \\ F(i) = a \times F(i-1) + b \times F(i-2) \end{cases}$$

Please calculate how many people will be in the last pile (value of $F(N)$) in the end of the experiment for Chiu. In addition, there may be lots of people joining the experiments, so please print the remainder of answer divided by $10^8 + 7$.

輸入說明

輸入只有一行，第一行有 5 個數字，分別為 N, X, Y, a, b ，意義請參考題目說明

There is only one line for input. There are 5 numbers in the first line. They are N, X, Y, a, b . Please check the description down below for their meaning.

- $1 \leq N \leq 10^9$
- $1 \leq X, Y \leq 10^7$
- $1 \leq a, b \leq 100$

輸出說明

請輸出答案除以 $10^8 + 7$ 之後的餘數

please print the remainder of answer divided by $10^8 + 7$

範例輸入 1

5 1 1 1 1

範例輸出 1

5

範例輸入 2

3 2 3 1 2

範例輸出 2

7

提示

你以為這次又是調酒嘛