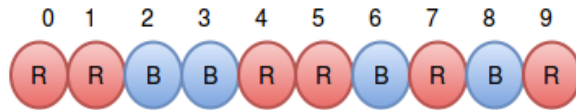


# Alien Flowers

Meera bought a house on Mars, and plans to decorate it with chains of alien flowers. Each flower is either red ( $R$ ) or blue ( $B$ ), and Meera knows how many occurrences of  $RR$ ,  $RB$ ,  $BB$ , and  $BR$  she wants to see in a chain.

The diagram below shows a flower chain of length 10:



In this example,  $RR$  occurs 2 times (at positions 0 and 4),  $RB$  occurs 3 times (at positions 1, 5, and 7),  $BB$  occurs 1 time (at position 2), and  $BR$  occurs 3 times (at positions 3, 6, and 8).

Meera wants your help determining how many different chains with *positive length* can be made. Given  $A$ ,  $B$ ,  $C$ , and  $D$ , find the number of different chains having occurrences of  $RR$ ,  $RB$ ,  $BB$  and  $BR$  equal to inputs  $A$ ,  $B$ ,  $C$ , and  $D$ , respectively. As the answer can be very large, your printed output should be  $answer \% (10^9 + 7)$ .

## Input Format

One line of space-separated, non-negative integers:  $A$  (occurrences of  $RR$ ),  $B$  (occurrences of  $RB$ ),  $C$  (occurrences of  $BB$ ), and  $D$  (occurrences of  $BR$ ), respectively.

## Constraints

- For 20% Points:  $0 \leq A, B, C, D \leq 4$
- For 50% Points:  $0 \leq A, B, C, D \leq 10^2$
- For 100% Points:  $0 \leq A, B, C, D \leq 10^5$

## Output Format

Find the number of chains having  $A$ ,  $B$ ,  $C$ , and  $D$  occurrences of  $RR$ ,  $RB$ ,  $BB$ , and  $BR$ , respectively, and print the  $answer \% (10^9 + 7)$ .

## Sample Input

```
1 1 2 1
```

## Sample Output

```
5
```

## Explanation

The 5 flower chains having exactly 1, 1, 2, and 1 occurrences of  $RR$ ,  $RB$ ,  $BB$  and  $BR$  are:

