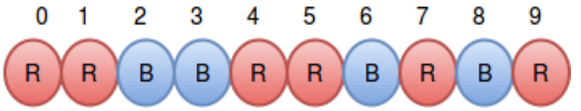
Alien Flowers

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

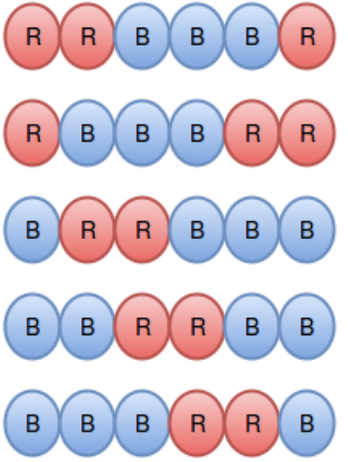
```
1 1 2 1
```

Sample Output

```
5
```

Explanation

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


R R B B B R
R B B B R R
B R R B B B
B B R R B B
B B B R R B