

Flower Garden

Description

Ada wants to place the flowers in her garden in a row. There are only two types of flowers: red and blue. To make it beautiful, Ada decides that the placement method must satisfy: for any consecutive segment, the difference between the number of red flowers and blue flowers is no more than k .

Now there are n red flowers and m blue flowers, Ada wants you to help her calculate the total number of placement methods.

The result should modulo 12345678.

Input Format

Three integers n, m, k in one line.

Output Format

One integer, the total number of placement methods.

Sample

Sample input

```
2 2 1
```

Sample Output

```
2
```

Hint

For 100% testcases, $n, m \leq 150, k \leq 20$.