IOITC 2019
Team Selection Test 1

Diverse Subarrays

You have been asked by the Modern Art Society of Siruseri to create an array. The array should contain N elements, and each element should be an integer between 1 and N (both inclusive). They want the array to celebrate diversity, and hence have placed a few more restrictions on it:
If you take any K consecutive elements in the array, then the minimum among them should be at most A. Similarly, if you take any K consecutive elements in the array, then the maximum among them should be at least B.

You want to find the number of different arrays that you can construct, following these restrictions. Since the number may be very large, you are satisfied to know the answer modulo $10^9 + 7$.

Input

- The first line contains four integers, N, K, A and B.

Output

Output a single integer in a new line, which should be the number of valid arrays modulo $10^9 + 7$.

Constraints

- $2 \leq N \leq 5000$
- $2 \leq K \leq 2000$
- $K \leq N$
- $1 \leq A < B \leq N$

Subtasks

- Subtask 1: 41%: $2 \leq N \leq 100$ and $2 \leq K \leq 100$
- Subtask 2: 12%: $b = a + 1$
- Subtask 3: 47%: Original constraints.

Sample Input 1

```
2 2 1 2
```

Sample Output 1

```
2
```

Explanation 1

You need to construct an array of 2 elements such that the minimum is ≤ 1 and the maximum is ≥ 2. There are only such arrays: $[1, 2]$ and $[2, 1]$. Hence the answer is 2.

Sample Input 2

```
3 3 1 3
```

Sample Output 2

```
12
```

Sample Input 3

```
10 5 1 10
```

Sample Output 3

```
88372962
```