K-element Sequences

Given two integers, N and K, find the number of sequences that meet the following criteria:

- The sequence is of size K (i.e., contains K integers).
- Each element in the sequence is a *positive* integer.
- The sum of all elements in the sequence is N.

Input Format

The first line contains the number of test cases, T.
The T subsequent lines each describe a test case as two space-separated integers, N and K.

Constraints

- $1 \le T \le 1000$
- $1 \le K \le N \le 2\times10^{6}$

Output Format

For each test case, print the total number of possible K-element sequences of positive integers such that the sum of the elements in each sequence is N. As the answer may be large, output your answer modulo $\left(10^9 + 7\right)$.

Sample Input

```
3
4 3
5 2
7 7
```

Sample Output

```
3
4
1
```

Explanation

In the first test case, $N = 4$, $K = 3$
The possible sequences are:
$(1,1,2)$
$(1,2,1)$
$(2,1,1)$

There are three possible sequences, so our first line of output is the result of $3 \ \bmod \left(10^9 + 7\right)$, which is 3.