Beautiful Sets

Consider a set, S, consisting of k integers. The set is *beautiful* if *at least one* of the following conditions holds true for every $x \in S$:

1. $x - 1 \in S$
2. $x + 1 \in S$

For example, $S = \{1, 2, 50, 51\}$ is *beautiful* but $S = \{1, 5, 9\}$ is *not beautiful*. Given two integers, n and k, can you find the number of different k-element beautiful sets you can create using integers $\in [1, n]$?

Perform q queries where each query i consists of some n_i and k_i. For each query:

- Find the number of different beautiful sets having exactly k elements that can be generated using integers in the inclusive range from 1 to n.
- Print the number of beautiful sets, modulo $10^9 + 7$, on a new line.

Input Format

The first line contains an integer, q, denoting the number of queries.
Each line i of the q subsequent lines consists of two space-separated positive integers describing the respective values of n_i and k_i for the query.

Constraints

- $1 \leq q \leq 10$
- $1 \leq n \leq 10^6$
- $1 \leq k \leq n$

Subtasks

- $1 \leq n \leq 1000$ for 40% of the maximum score.

Output Format

For each query, print the number of different beautiful sets of size k that can be generated using integers in the inclusive range from 1 to n on a new line. As the answers to these queries can be quite large, each answer must be modulo $10^9 + 7$.

Sample Input

```
2
6 4
27 2
```

Sample Output

```
6
26
```

Explanation

For the first query, the beautiful sets of size $k = 4$ we can create using numbers from 1 to $n = 6$ are shown below:

- $\{1, 2, 3, 4\}$

- $\{2, 3, 4, 5\}$
- $\{3, 4, 5, 6\}$
- $\{1, 2, 4, 5\}$
- $\{1, 2, 5, 6\}$
- $\{2, 3, 5, 6\}$

As there are are six such sets, we print the result of $6 \% (10^9 + 7) = 6$ on a new line.