Problem D. Binomial Coefficients

Time limit 1000 ms
Mem limit 524288 kB

Your task is to calculate n binomial coefficients modulo $10^9 + 7$.

A binomial coefficient $\binom{a}{b}$ can be calculated using the formula $\frac{a!}{b!(a-b)!}$. We assume that a and b are integers and $0 \leq b \leq a$.

Input

The first input line contains an integer n: the number of calculations.

After this, there are n lines, each of which contains two integers a and b.

Output

Print each binomial coefficient modulo $10^9 + 7$.

Constraints

- $1 \leq n \leq 10^5$
- $0 \leq b \leq a \leq 10^6$

Example

Input	Output
3 5 3 8 1 9 5	10 8 126