

# Busy Beaver's Water Network

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2 seconds  
Memory limit:         1024 megabytes

Busy Beaver has taken on a new engineering challenge: designing a water distribution system for his growing beaver colony. The system will consist of  $N$  water stations (nodes) connected by pipes (edges), where no pipe connects a station to itself and no two stations have more than one pipe between them. As a careful planner, Busy Beaver ensures the entire system is connected; that is, water can flow from any station to any other through some series of pipes.

Busy Beaver wants his system to be resilient: no matter which spanning tree of pipes is chosen to serve as the active network, there must always be at least one *main station*, a node with degree at least  $K$  in that tree, where  $\frac{N+3}{2} \leq K < N$ .

How many distinct connected pipe networks on  $N$  labeled stations satisfy this condition? Two networks are considered distinct if they differ by at least one pipe. Since the answer may be enormous, output it modulo 998 244 353.

## Input

The input contains two integers  $N$  and  $K$  ( $5 \leq N \leq 5000$ ,  $\frac{N+3}{2} \leq K < N$ ).

## Output

Output a single integer — the number of connected graphs satisfying the condition, modulo 998 244 353.

## Scoring

There are four subtasks for this problem.

- (10 points):  $N \leq 7$ .
- (20 points):  $K \geq \max(N - 5, \frac{N+3}{2})$ .
- (50 points):  $N \leq 200$ .
- (20 points): No additional constraints.

## Examples

standard input	standard output
7 5	322
50 28	360690501