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## Eating machine (2)

P80631\_en

Disetè Concurs de Programació de la UPC - Semifinal (2019-06-19)

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Jan is an eating machine. At this moment, he is in front of a table with  $c$  different kinds of cakes. He wants to eat cake exactly  $n$  times, but with two restrictions:

- Every kind of cake must be tasted at least once.
- He wants to repeat at least with half of the kinds of cakes.

Given  $n$  and  $c$ , can you compute the number of ways of eating cakes? The eating order matters. For instance, if there are three kinds of cakes, say A B and C, and Jan wants to eat cake six times, these are some of the 450 possibilities: AAABBC, ABABAC, AACCB. Note that AAAABC is not an allowed combination.

### Input

Input consists of several cases, each with  $n$  and  $c$ . Assume  $2 \leq n \leq 80$ , and that for each given combination there is at least one way of eating cake.

### Output

For every case, print the result modulo  $10^8 + 7$ .

#### Sample input

```
2 1
3 2
4 2
6 3
80 53
```

#### Sample output

```
1
6
14
450
61087945
```

### Problem information

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