Eating machine (2) P80631_en

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, AACCBB. 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 1

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

Sample output 1

```
1
6
14
450
61087945
```

Problem information

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