Problem L. Labeled Connected Graphs

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

You are given an integer n and a prime modulo m.

Calculate the sum of distances between the first and the second vertices over all distinct labeled connected graphs with n vertices.

Output any integer congruent to the actual sum modulo m. Formally, if the actual sum is S output any integer x such that $-2^{63} \le x < 2^{63}$ and $x - S$ is divisible by m.

Input

The only line contains two integers n and m ($2 \le n \le 400$, $10^6 + 3 \le m \le 10^9 + 9$, m is prime), the number of vertices in the graphs and the modulo.

Output

Print a single integer — the answer to the problem.

Examples

standard input	standard output
2 998244353	1
3 1001177	5
4 1000003	54
5 1000159	1108
6 1000253	41880
7 100000007	2946440
10 100001303	82834735
25 100002013	77432340
31 100001887	7237626
42 100002593	44678783
68 31235417	22825855
117 12345847	4325099
200 1000000007	194453485
228 12348143	6438982
300 34569361	24221941
312 34570903	12146306
322 41236777	26590080
350 41237641	40908795
366 66666667	57608403
378 99000007	61227322
399 99990001	46973248
400 1000000009	478599227

Note

If you manage to get WA in this problem and we reasonably believe that you did not intentionally try to do so, we might give you a cookie somehow.