F. Uniformly Branched Trees

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

A tree is a connected graph without cycles.

Two trees, consisting of n vertices each, are called *isomorphic* if there exists a permutation $p: \{1, ..., n\} \to \{1, ..., n\}$ such that the edge (u, v) is present in the first tree if and only if the edge (p_u, p_v) is present in the second tree.

Vertex of the tree is called internal if its degree is greater than or equal to two.

Count the number of different non-isomorphic trees, consisting of n vertices, such that the degree of each internal vertex is **exactly** d. Print the answer over the given prime modulo mod.

Input

The single line of the input contains three integers n, d and mod ($1 \le n \le 1000$, $2 \le d \le 10$, $10^8 \le mod \le 10^9$) — the number of vertices in the tree, the degree of internal vertices and the prime modulo.

Output

Print the number of trees over the modulo mod.

Examples

input
```
5 2 433416647
```
output
```
1
```

input
```
10 3 409693891
```
output
```
2
```

input
```
65 4 177545087
```
output
```
910726
```