Problem I. Modulo-magic squares

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

A matrix of size $n \times n$ filled with integers from 0 to $m-1$ is called a *modulo-magic square modulo* m if there exists a constant C such that the following congruence relations hold:

$$\sum_{i=1}^{n} a_{i,j} \equiv C \pmod{m} \quad \text{for } j = 1, \ldots, n$$

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$$\sum_{i=1}^{n} a_{i,i} \equiv C \pmod{m}$$

$$\sum_{i=1}^{n} a_{i,n-i+1} \equiv C \pmod{m}$$

In words, the sums of numbers in each row, column and both diagonals modulo m are equal.

Given n and m, find how many different modulo-magic squares modulo m of size n exist.

Input

The first line of input contains an integer T: the number of test cases ($1 \le T \le 100$). After that, T lines follow. Each of these lines contains two integers n and m: the size of the matrix and the modulo ($3 \le n \le 10^9$, $2 \le m \le 10^9$).

Output

For each test case, output the number of modulo-magic squares on a separate line. Since the answers can be very large, output them modulo $10^9 + 7$.

Example

standard input	standard output
1 3 2	8