## Rooks

You are given a checkerboard from which some fields have been removed.

$$
\text { checkerboard } 9 x 9
$$

One is allowed to place pieces only on the grey fields (which lie on five diagonal lines). Johny is wondering in how many ways can he put $N$ rooks on such a restricted chessboard of width $N$ so that no two rooks stay on the same row or column.

## Input

In the first and only line of input there are two numbers - $N$ and $M(4 \leq N, M \leq 10000000)$, representing the width of the chessboard and a number modulo which you are to output the result.

## Output

Output should contain only one number - the number of ways of placing the rooks, modulo $M$.

## Example

Input:
41000
Output:

## Scoring

By solving this problem you will score 10 points.

