

Description

Jimmy wants to play a game with his friends. They sit in a circle and the first person starts off with a hot potato. He or she will pass the potato clockwise q passes. The person holding the potato after q passes is out and the game continues with this person starting the round but not participating any further. They continue this until there is one person left. Jimmy wants to know where he should sit to be the last one standing.

Here's an example with five friends and $q = 3$.



Here the potato always starts off with person 0. Person 0 passes the potato q times clockwise to land on person 3. This person is now out and we'll reiterate this process with person 3 starting the round but no longer being able to catch the potato. We'll skip person 3 in the future.



Person 3 is now out. They started the round, so q passes will end up at person 1 who will now be out.

This process will continue and in the end 4 will be the last one remaining.

Input

The input consists of one line containing two integers: $1 \leq n \leq 1,000,000$, indicating the number of players, and $1 \leq q \leq 10$, the number of passes performed in each iteration.

Note: The potato will always initially start with person 0.

Output

The output should be a single integer indicating the position of the last player remaining.

Sample Input 1

5 3

Sample Output 1

4
