Spring Coding Bowl '22 P4 - Circle Game

Time limit: 1.0s **Memory limit:** 512M

Bored out of your mind on a long car ride, you decide to try out a peculiar single-player game. Upon opening the box, you discover a cardboard circle, divided into N slices, as well as a single token. The topmost section is inscribed with the integer N, and the i^{th} segment in the clockwise direction is marked with the integer $N-i$. The token is then placed on the piece labelled N. You are given K turns, where during each turn, you may move the token either one or two tiles forward in the clockwise direction, returning to the piece marked with N after each loop.

After all the turns have elapsed, your total score is calculated by calculating the sum of values that the token **ended** on after each turn, meaning that the score of the tile that the token starts on during the first turn is **not counted**. Can you determine the maximum possible score that you can obtain after playing optimally for K turns, taken modulo 10^9+7?

Constraints

For all subtasks, $1 \leq N \leq 100$.

Subtask 1 [30%]

$1 \leq K \leq 10^5$

Subtask 2 [70%]

$1 \leq K \leq 10^{18}$

Input Specification

The first and only line of input will contain the integers N and K, in that order.

Output Specification

Output, on a single line, the maximum score that can be achieved within K moves.

Sample Input

```
5 5
```

Sample Output

```
18
```

Explanation of Sample Output

The best score you can obtain is by moving to the tiles $5 \to 4 \to 2 \to 5 \to 4 \to 3$, obtaining a final score of $4 + 2 + 5 + 4 + 3 = 18$.