

# Handshakes

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          2 seconds  
Memory limit:       256 megabytes

The programming police is having a planning meeting around a circular table. Given  $2N$  officers equally arranged around a circle and two unfriendly officers at positions  $A$  and  $B$  (positions are labeled 1 to  $2N$  clockwise), who will not shake hands with each other, find the number of different configurations for every officer to shake hands with exactly one other officer without anyone's hands crossing someone else's (mod  $10^9 + 7$ ). Two configurations are different if at least one officer shakes hands with a different officer between those configurations.

## Input

Line 1:  $N$   
Line 2: Two space separated integers,  $A$  and  $B$

## Output

Line 1: The total number of possibilities of handshakes (mod  $10^9 + 7$ )

## Example

standard input	standard output
3 1 4	4

## Note

$2 \leq N \leq 10000$   
 $1 \leq A < B \leq 2N$   
 $B - A$  is an odd integer