C. Riding in a Lift

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Imagine that you are in a building that has exactly n floors. You can move between the floors in a lift. Let's number the floors from bottom to top with integers from 1 to n. Now you're on the floor number a. You are very bored, so you want to take the lift. Floor number b has a secret lab, the entry is forbidden. However, you already are in the mood and decide to make k consecutive trips in the lift.

Let us suppose that at the moment you are on the floor number x (initially, you were on floor a). For another trip between floors you choose some floor with number y ($y \neq x$) and the lift travels to this floor. As you cannot visit floor b with the secret lab, you decided that the distance from the current floor x to the chosen y must be strictly less than the distance from the current floor x to floor b with the secret lab. Formally, it means that the following inequation must fulfill: $|x - y| < |x - b|$. After the lift successfully transports you to floor y, you write down number y in your notepad.

Your task is to find the number of distinct number sequences that you could have written in the notebook as the result of k trips in the lift. As the sought number of trips can be rather large, find the remainder after dividing the number by 1000000007 ($10^9 + 7$).

Input

The first line of the input contains four space-separated integers n, a, b, k ($2 \leq n \leq 5000$, $1 \leq k \leq 5000$, $1 \leq a, b \leq n$, $a \neq b$).

Output

Print a single integer — the remainder after dividing the sought number of sequences by 1000000007 ($10^9 + 7$).

Examples

input
5 2 4 1
output
2

input
5 2 4 2
output
2

input
5 3 4 1
output
0

Note

Two sequences $p_1, p_2, ..., p_k$ and $q_1, q_2, ..., q_k$ are *distinct*, if there is such integer j ($1 \leq j \leq k$), that $p_j \neq q_j$.

Notes to the samples:

1. In the first sample after the first trip you are either on floor 1, or on floor 3, because $|1 - 2| < |2 - 4|$ and $|3 - 2| < |2 - 4|$.
2. In the second sample there are two possible sequences: $(1, 2)$; $(1, 3)$. You cannot choose floor 3 for the first trip because in this case no floor can be the floor for the second trip.
3. In the third sample there are no sought sequences, because you cannot choose the floor for the first trip.