Define an alternating permutation of the set $\{1, 2, 3, \ldots, n\}$ to be an arrangement of those numbers such that the permutation $a_1 \ldots a_n$ satisfies $(a_{i-1} < ai$ AND $a_i > a_{i+1})$ or $(a_{i-1} > a_i$ AND $a_i < a_{i+1})$ for all $1 < i < n$.

In this problem, compute the number of alternating permutations for a given triple of (n, a_1, a_n).

Input

A number of of inputs (≤ 1500), each line with n, a_1, a_n ($2 \leq n \leq 2000$, $1 \leq a_1, a_n \leq n$).

Output

For each input, output the total number of permutations *modulo* 1000000007 on one line.

Sample Input

```
2 1 2
4 2 3
```

Sample Output

```
1
2
```