Count Fox Sequences

Problem Statement

A non-decreasing sequence is a called a **Fox** sequence, iff the most frequent element in the sequence is unique.

e.g. The sequence `1, 1, 2, 3, 4` is a **Fox** sequence, because it follows the above definition. The most frequent element is 1. It occurs twice in the series, and is unique.

But the sequence `1, 1, 2, 2` is *not* a **Fox** sequence, because there are two most frequent elements - 1 and 2. It violates the uniqueness property.

Note: Sequence `2, 1, 1` is not a **Fox** sequence, because it is not a non-decreasing sequence.

You need to find the number of all possible **Fox** sequences of length *n* with elements having value between *lo* and *hi* inclusive.

As the number can grow very large, return the number modulo ($10^9 + 7$).

Input Format
The first line will contain *T*, i.e., the number of test cases.
For each test case, there will be a single line containing three space separated integers *n, lo, hi*.

Output Format
For each test case, display a single value corresponding to the number of all possible **Fox** sequences.

Constraints

$1 \le T \le 5$
$1 \le lo, hi \le 10^9$
$lo \le hi$
$0 \le |hi - lo| < 10^5$
$1 \le n \le 10^5$

Sample Input

```
5
2 1 1
2 1 3
3 1 2
4 4 5
10 2 4
```

Sample Output

```
1
3
4
4
60
```

Explanation
For the first test case, `1 1` is the only possible **Fox** sequence.
For the second test case, `1 1`, `2 2`, and `3 3` are three possible **Fox** sequences.
For the third test case, `1 1 1`, `2 2 2`, `1 1 2`, and `1 2 2` are four possible **Fox**

sequences.
Rest of the test cases are up to you to figure out.