Problem H. Unreachable Land

Input file: standard input
Output file: standard output

Yuki dreams of reaching the unreachable land. After years of hard work, only this problem remains before her.

Given three integers a, b, m. You need to perform m rounds of operations. In the i-th round, you can either set $a \leftarrow a \bmod (m-i+1)$ or choose not to modify a. Find the number of ways to make $a = b$ after m rounds, modulo 998244353.

Two schemes are considered different if and only if there exists some $1 \le i \le m$ such that in one scheme you performed a modification in the i-th round, while in the other you did not. Note that choosing to perform $a \leftarrow a \bmod (m-i+1)$ is considered a modification, regardless of whether the value of a changes after the operation.

You once dreamed of reaching the unreachable land that only exists in fairy tales. Now that Yuki has a chance to realize this dream, you must help her.

Input

This problem contains multiple test cases.

The first line contains a positive integer t ($1 \le t \le 10^5$), representing the number of test cases.

For each test case:

- A single line contains three integers a, b, m ($0 \le b < m \le a \le 2 \cdot 10^5$).

It is guaranteed that the sum of a over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output a single line containing an integer representing the answer modulo 998244353.

Example

standard input	standard output
5 5 0 5 5 2 3 10 1 7 10 6 10 100000 114 514	25 1 14 0 837481226

Note

For the first test case:

- One valid operation scheme is to perform modifications in the 3-rd and 4-th rounds.
- Another valid operation scheme is to perform modifications in all rounds from 1 to 5.

For the second test case:

- The only valid operation scheme is to perform a modification in the 3-rd round.

For the fourth test case:

- It can be proven that no valid operation scheme exists.