

Equations

Input file: **standard input**
Output file: **standard output**
Time limit: 2.5 seconds
Memory limit: 256 megabytes

Let $f(a, b, m)$ be the **least non-negative** solution of the congruence equation:

$$ax \equiv b \pmod{m}$$

If there isn't a solution, then $f(a, b, m) = 0$.

Given n, a, b , calculate $\sum_{i=1}^n f(a, b, i) \bmod 998244353$.

Input

The first line contains an integer T ($1 \leq T \leq 5$) denoting the number of test cases.

Then T lines follow, each containing three positive integers n, a, b ($1 \leq n \leq 10^{18}, 1 \leq a, b \leq 10^6$).

Output

Output T lines. The i -th line contains the answer of the i -th test case.

Example

standard input	standard output
5	2
5 4 3	3
5 3 4	15
10 5 8	10
10 8 5	2519
100 79 97	