Problem F. F For Function

Time limit: 6 seconds

Let w be a positive integer. For positive integers a and b, let's define a function $f_w(a, b)$ as the largest integer $k \geq 0$ such that for all integers $0 \leq i \leq k$ the number $a + w \cdot i^2$ is divisible by $b + i$. If there is no such k, let $f_w(a, b) = 0$. It can be shown that $a + w \cdot i^2$ cannot be divisible by $b + i$ for all $i \geq 0$, that is, the function $f_w(a, b)$ is well defined.

You are given three positive integers w, m_a, and m_b. Find the sum $\sum_{a=1}^{m_a} \sum_{b=1}^{m_b} f_w(a, b)$.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 5$). The descriptions of the test cases follow.

The only line of each test case contains three positive integers m_a, m_b, w ($1 \leq m_a, m_b \leq 10^{18}$, $1 \leq w \leq 10^6$).

Output

For each test case print a single integer — the answer to the problem.

Example

standard input	*standard output*
5 1 1 239 6 3 1 15 10 3 1000 100 11 25 1000 50	5 6 19 1519 34