

Reverse Card (Hard Version)

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 256 megabytes

The two versions are different problems. You may want to read both versions. You can make hacks only if both versions are solved.

You are given two positive integers n, m .

Calculate the number of ordered pairs (a, b) satisfying the following conditions:

- $1 \leq a \leq n, 1 \leq b \leq m$;
- $b \cdot \gcd(a, b)$ is a multiple of $a + b$.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 10^4$). The description of the test cases follows.

The first line of each test case contains two integers n, m ($1 \leq n, m \leq 2 \cdot 10^6$).

It is guaranteed that neither the sum of n nor the sum of m over all test cases exceeds $2 \cdot 10^6$.

Output

For each test case, print a single integer: the number of valid pairs.

Example

standard input	standard output
6	0
1 1	1
2 3	1
3 5	6
10 8	423
100 1233	5933961
1000000 1145141	

Note

In the first test case, no pair satisfies the conditions.

In the fourth test case, $(2, 2), (3, 6), (4, 4), (6, 3), (6, 6), (8, 8)$ satisfy the conditions.