UVa Online Judge

12429 Finding Magic Triplets

Hermione Granger is very concerned about the magical disabilities of squibs (A Squib is someone who was born into a wizard family but hasnt got any magic powers). Since the fall of Voldemort, she has been working hard to invent a potion to cure these disabilities. After a lot of research work, she has invented that a certain amount of apple juice needs to be mixed with the burnt leaves of birch tree in a lot of cherry juice. Later, she invents that for a k-year old person, if a amount of apple juice, b amount of leaves of birch tree and c amount of cherry juice are mixed, it must satisfy the following equation:

$$(a + b^2) \bmod k = c^3 \bmod k, \text{ where } a \leq b \leq c \text{ and } 1 \leq a, b, c \leq n.$$

She names such a triplet (a, b, c) as a magic triplet for a k-year old person. She wants to know how many different magic triplets exist for known values of n and k. A triplet is different from another if any of the three values is not same in both triplets.

Input

First line of the input contains a single positive integer T $(1 \leq T \leq 400)$ denoting the number of test cases. Then in each of the following T lines, there will be two integers n and k $(1 \leq n, k \leq 10^5)$.

Output

For each of the cases, output a single line containing '`Case` x`:` y', where x is the case number and y is the number of magic triplets.

Sample Input

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1
10 7
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Sample Output

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Case 1: 27
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