ACM ICPC 2017 DHAKA REGIONAL (MOCK CONTEST)

Finished

THE CONTEST HAS ENDED.

D. Power from Power

Score: 1

CPU: 5s
Memory: 1500MB

Given two integer numbers **a** and **b**, you have to determine how many ways we can get such **c** and **d** so that **c != a** and **d != b** but **a^b = c^d** where a, b, c and d are positive integers. Here **!=** is the not equal operator and **^** is the power operator.

Input

First line of the input is **T(≤500)**, then T test cases follows in next **T** lines. Each line contains two positive integer numbers **a** and **b (2 ≤ a ≤ 10^14, 1 ≤ b ≤ 10^14)**.

Output

For each test case print a line in "**Case I: S**" format where **I** is the case number and **S** is the result.

Sample

Input	Output
2 4 2 27 1	Case 1: 2 Case 2: 1