Problem K. Last Defence

Description

Given two integers A and B. Sequence S is defined as follow:

- $S_0 = A$
- $S_1 = B$
- $S_i = |S_{i-1} - S_{i-2}|$ for $i \geq 2$

Count the number of distinct numbers in S.

Input

The first line of the input gives the number of test cases, T. T test cases follow. T is about 100000.

Each test case consists of one line - two space-separated integers A, B. $(0 \leq A, B \leq 10^{18})$.

Output

For each test case, output one line containing "Case #x: y", where x is the test case number (starting from 1) and y is the number of distinct numbers in S.

Samples

Sample Input	Sample Output
2 7 4 3 5	Case #1: 6 Case #2: 5