H Number Transformation

Input: Standard Input
Output: Standard Output

You are given an integer number **S**. You can transform any integer number A to another integer number B by adding x to A. This x is an integer number which is a prime factor of A (Please note that 1 and A are not being considered as a factor of A). Now, your task is to find the minimum number of transformations required to transform S to another integer number **T**.

Input

For each test case, there will be a line with two integers, **S** (**1<=S<=100**) & **T** (**1<=T<=1000**), as described above. The last test case will be followed by a line with two 0 s denoting end of output. This case should not be processed.

Output

For every test case except the last one, print a line of the form "Case X: Y" where X is the serial number of output (starting from 1). Y is the minimum number of transformations required to transform **S** to **T**. If it is not possible to make T from S with the given rules, Y shall be -1.

Sample Input	Output for Sample Input
6 12 6 13 **0 0**	Case 1: 2 Case 2: -1

Explanation of case 1: You can make 12 from 6 in 2 steps in this way: 6->9->12.

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