

Divisors

Grundy is learning to find the divisors of a number. After a certain point, with huge surprise he noticed that there are some numbers for which he cannot find any divisor except for 1 and the number itself.

Now as a senior brother, he wants you to help him write a program which will help him to find such numbers in a given range $[L,R]$.

Input

Input starts with a single integer t ($t \leq 100$). Next t lines contains two space separated integers L and R . ($1 \leq L \leq R \leq 500$)

Output

For every case t print the desired output in this format: "Case t : There are X numbers between L and R ." (Quotes for clarification).

Example

Input:

```
2
1 10
14 16
```

Output:

```
Case 1: There are 4 numbers between 1 and 10.
Case 2: There are 0 numbers between 14 and 16.
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