Recycled Numbers

Do you ever become frustrated with television because you keep seeing the same things, recycled over and over again? Well I personally don't care about television, but I do sometimes feel that way about numbers.

Let's say a pair of distinct positive integers (n, m) is recycled if you can obtain m by moving some digits from the back of n to the front without changing their order. For example, (12345, 34512) is a recycled pair since you can obtain 34512 by moving 345 from the end of 12345 to the front. Note that n and m must have the same number of digits in order to be a recycled pair. Neither n nor m can have leading zeros.

Given integers A and B with the same number of digits and no leading zeros, how many distinct recycled pairs (n, m) are there with $A \leq n < m \leq B$?

Limits
$1 \leq T \leq 55$
A and B have the same number of digits.
$1 \leq A \leq B \leq 2000000$.

Are we sure about the output to Case #4?
Yes, we're sure about the output to Case #4.

Input

The first line of the input gives the number of test cases, T. T test cases follow. Each test case consists of a single line containing the integers A and B.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1), and y is the number of recycled pairs (n, m) with $A \leq n < m \leq B$.

Example

Input:
4
1 9
10 40
100 500
1111 2222

Output:
Case #1: 0
Case #2: 3
Case #3: 156
Case #4: 287