

## Problem C. Recycled Numbers

### Problem

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 (excluding leading zeros) in order to be a recycled pair.

Given integers **A** and **B** with the same number of digits, how many distinct recycled pairs  $(n, m)$  are there with  $\mathbf{A} \leq n < m \leq \mathbf{B}$ ?

### 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  $\mathbf{A} \leq n < m \leq \mathbf{B}$ .

### Limits

$1 \leq \mathbf{T} \leq 50$ .

**A** and **B** have the same number of digits.

### Small dataset

$1 \leq \mathbf{A} \leq \mathbf{B} \leq 1000$ .

### Large dataset

$1 \leq \mathbf{A} \leq \mathbf{B} \leq 2000000$ .

### Sample

Input	Output
4	Case #1: 0
1 9	Case #2: 3
10 40	Case #3: 156
100 500	Case #4: 287
1111	
2222	

Are we sure about the output to Case #4?

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