

Qualification Round 2012

[A. Speaking in Tongues](#)[B. Dancing With the Googlers](#)**C. Recycled Numbers**[D. Hall of Mirrors](#)[Contest Analysis](#)[Questions asked](#)

Submissions

Speaking in Tongues

15pt Not attempted
17356/19464
 users correct (89%)

Dancing With the Googlers

10pt Not attempted
12384/13899
 users correct (89%)

10pt Not attempted
10762/12138
 users correct (89%)

Recycled Numbers

10pt Not attempted
11747/12327
 users correct (95%)

15pt Not attempted
6811/10604 users
 correct (64%)

Hall of Mirrors

15pt Not attempted
551/879 users
 correct (63%)

25pt Not attempted
184/259 users
 correct (71%)

Top Scores

hos.lyric	100
qnighy	100
DjinnKahn	100
levlam	100
iwiskimo	100
mystic	100
TripleM	100
aleksey	100
royf	100
krijgertje	100

Problem C. Recycled Numbers

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
10 points

Solve C-small

Large input
15 points

Solve C-large

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 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 $\mathbf{A} \leq n < m \leq \mathbf{B}$?

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.

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