

E. Sponsor of Your Problems

time limit per test: 2 seconds
 memory limit per test: 256 megabytes

For two integers a and b , we define $f(a, b)$ as the number of positions in the decimal representation of the numbers a and b where their digits are the same. For example, $f(12, 21) = 0$, $f(31, 37) = 1$, $f(19891, 18981) = 2$, $f(54321, 24361) = 3$.

You are given two integers l and r of the **same** length in decimal representation. Consider all integers $l \leq x \leq r$. Your task is to find the minimum value of $f(l, x) + f(x, r)$.

Input

Each test consists of multiple test cases. The first line contains a single integer t ($1 \leq t \leq 10^4$) — the number of test cases. The description of the test cases follows.

Each test case consists of a single line containing two integers l and r ($1 \leq l \leq r < 10^9$).

It is guaranteed that the numbers l and r have the same length in decimal representation and do not have leading zeros.

Output

For each test case, output the minimum value of $f(l, x) + f(x, r)$ among all integer values $l \leq x \leq r$.

Example

input	Copy
14	
1 1	
2 3	
4 6	
15 16	
17 19	
199 201	
899 999	
1990 2001	
6309 6409	
12345 12501	
19987 20093	
746814 747932	
900990999 900991010	
999999999 999999999	
output	Copy
2	
1	
0	
3	
2	
2	
1	
3	
3	
4	
3	
5	
12	
18	

Note

In the first test case, you can choose $x = 1$. Then $f(1, 1) + f(1, 1) = 1 + 1 = 2$.

Codeforces Round 1032 (Div. 3)

Contest is running

01:42:10

Contestant



→ Submit?

Language: GNU G++23 14.2 (64 bit, ms) ▼

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
324832747	Jun/17/2025 18:06	Accepted

In the second test case, you can choose $x = 2$. Then $f(2, 2) + f(2, 3) = 1 + 0 = 1$.

In the third test case, you can choose $x = 5$. Then $f(4, 5) + f(5, 6) = 0 + 0 = 0$.

In the fourth test case, you can choose $x = 15$. Then $f(15, 15) + f(15, 16) = 2 + 1 = 3$.

In the fifth test case, you can choose $x = 18$. Then $f(17, 18) + f(18, 19) = 1 + 1 = 2$.

In the sixth test case, you can choose $x = 200$. Then
 $f(199, 200) + f(200, 201) = 0 + 2 = 2$.

In the seventh test case, you can choose $x = 900$. Then
 $f(899, 900) + f(900, 999) = 0 + 1 = 1$.

In the eighth test case, you can choose $x = 1992$. Then
 $f(1990, 1992) + f(1992, 2001) = 3 + 0 = 3$.

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