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 $l \le x \le r$. 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 ($1 \le t \le 10^4$) — 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 ($1 \le l \le r < 10^9$).

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 $l \le x \le r$.

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 $f(1, 1) + f(1, 1) = 1 + 1 = 2$.

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 $f(1990, 1992) + f(1992, 2001) = 3 + 0 = 3$.