Problem H. Friendship is Magic

Time limit: 1 second
Memory limit: 1024 megabytes

Rockdu is a pony living in Ponyville. His best friend, Macaronlin, also lives there. Rockdu values friendship so much that he shares everything with Macaronlin, even integers.

Here comes the question: how to share an integer with someone else? For an integer x, Rockdu splits it into two parts. Specifically, he treats x in decimal form as a string without leading zeros, and splits it into two non-empty substrings at a certain position. He then considers these two substrings as two separate decimal integers, denoted as x_1 (the former) and x_2 (the latter).

Rockdu wants x_1 and x_2 to be as close in value as possible. Therefore, among all possible splits, he chooses the one that minimizes the absolute difference between x_1 and x_2. For example, if $x = 1003$, there are three possible ways to split it: 1|003, 10|03, and 100|3. Rockdu chooses the first way because it yields the smallest absolute difference: $|1 - 3| = 2$, whereas the other ways give $|10 - 3| = 7$ and $|100 - 3| = 97$.

Let $f(x)$ be defined as the smallest absolute difference between the two integers resulting from splitting x. For example, $f(1003) = 2$. Given two integers l and r, Rockdu wants to calculate the sum of $f(i)$ for all i in the range $[l, r]$. Since the answer may be very large, please output it modulo $10^9 + 7$.

Input

The first line contains an integer T ($1 \le T \le 1000$), indicating the number of test cases.

Each test case contains two integers l, r ($10 \le l \le r \le 10^{18}$) in a single line.

Output

For each test case, output the answer modulo $10^9 + 7$ in a single line.

Example

standard input	standard output
2 108 112 114514 1919810	31 86328270

Note

For the first test case in the sample:

- $f(108) = \min(|1 - 8|, |10 - 8|) = \min(7, 2) = 2$
- $f(109) = \min(|1 - 9|, |10 - 9|) = \min(8, 1) = 1$
- $f(110) = \min(|1 - 10|, |11 - 0|) = \min(9, 11) = 9$
- $f(111) = \min(|1 - 11|, |11 - 1|) = \min(10, 10) = 10$
- $f(112) = \min(|1 - 12|, |11 - 2|) = \min(11, 9) = 9$

Therefore, $\sum_{i=108}^{112} f(i) = 2 + 1 + 9 + 10 + 9 = 31$.