
Problem A. Equanimous

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 256 megabytes

Alice, Bob and Eve are playing a game on craft papers. Every time Eve shows a natural number, Alice and Bob should write the number (in the decimal representation) on their own papers, add a plus sign or a minus sign before each digit, and then evaluate the arithmetic expression he or she has wrote. The one with the lower **absolute value** of his or her expression wins. If their absolute values are the same, it will cause a draw and they need to play one more time.

Actually, the game will never end if they are smart enough, so after a while, they turn to focus on the optimal solution of the puzzle game. Let $f(m)$ be the minimal absolute value that can be built from m . They are wondering if you can help them determine $f(m)$ for every integer m satisfying $l \leq m \leq r$.

Wait. After realizing your perfect programming skill, they decided to make a puzzle for you as well. They have set several questions (l, r) for you, and your task is to find the sum of all the integers m between l and r (inclusive) satisfying $f(m) = k$ for $k = 0, 1, 2, \dots, 9$ and report the answer modulo $(10^9 + 7)$.

Input

The first line contains one integer n ($1 \leq n \leq 10^4$) indicating the number of questions.

Each of the next n lines contains two integers l and r ($1 \leq l \leq r \leq 10^{100}$) representing a question.

Output

For each question, output ten space-separated integers in one line, where the i -th integer indicates the sum of all the integers m , satisfying that $l \leq m \leq r$ and $f(m) = i$, modulo $(10^9 + 7)$.

Example

standard input
7
1 10
11 50
51 100
101 500
501 1000
19260817 19260818
1234567890123456789 1234567890987654321
standard output
0 11 2 3 4 5 6 7 8 9
110 210 211 193 166 180 84 47 19 0
385 770 579 497 424 310 306 243 171 90
19080 34666 27312 19047 10615 5490 2594 1097 299 0
43695 81005 67134 55962 46289 35085 23872 13924 6385 1899
19260817 19260818 0 0 0 0 0 0 0 0
230833519 749351908 0 0 0 0 0 0 0 0

Note

The digits of 19260817 in the decimal representation are $\{1, 9, 2, 6, 0, 8, 1, 7\}$, which can build an arithmetic expression $(+1 - 9 - 2 - 6 + 0 + 8 + 1 + 7)$, whose value and absolute value are 0.

The digits of 19260818 in the decimal representation are $\{1, 9, 2, 6, 0, 8, 1, 8\}$, which can build an arithmetic expression $(+1 - 9 + 2 + 6 - 0 - 8 - 1 + 8)$, whose value is -1 and absolute value is 1.