Strength

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

People often use approximate methods to express numerical values in everyday conversations. Whether discussing time, money, or other numbers, people tend to round off to make communication simpler and easier. For example, if you and your friends dine at a restaurant with a bill of 98 yuan, many would say, "The bill is a hundred yuan," instead of using the exact number.

If we take a more aggressive approach and round multiple times, the final result can become absurd. For instance, you could round 145 up to 200, because 145 can be rounded to 150, which can then be rounded to 200; when someone says 2000, it could actually have been 2001, 1999, 1888, or even 11451 before rounding.

Given a number x, calculate the *uncertainty* of x within the range $[0, z]$, which is the count of numbers within the range $[0, z]$ that can be x after *aggressive rounding*. Here, *aggressive rounding* is defined as performing the following rounding operation arbitrarily (possibly zero) times:

- Let the decimal representation of x be $\overline{x_k x_{k-1} \dots x_1}$, and choose an index $i \in \{1, 2, \dots, k\}$.
- If $x_i < 5$, subtract $x_i \cdot 10^{i-1}$ from x;
- otherwise, add $(10 - x_i) \cdot 10^{i-1}$ to x.

Input

The input consists of multiple test cases. The first line contains a single integer T ($1 \le T \le 10^5$) — the number of test cases. The description of the test cases follows.

The input contains two integers in a line: x and z ($0 \le x, z \le 10^{18}$). Refer to above for their meanings.

Output

Each line contains a single number, representing the *uncertainty* of x in the range $[0, z]$.

Example

standard input	standard output
5 0 2147483646 10 100 671232353 1232363 123001006660996 3122507962333010 100019990010301090 44519984489341188	2147483647 55 0 1919810 114514

Note

In the second test case, $10i + j$ ($i = 0, 1, \cdots, 9$, $j = 5, 6, 7, 8, 9$) and $10, 11, 12, 13, 14$ can be aggressively rounded to 10. Thus, the answer is 55.