Multiplication Practice (multiplication)

In the School of Reverse Education, the kids already know how to multiply 10-digit numbers in their heads, and now they are learning to write decimal digits on paper. The professor asks them to do the following task: given a positive integer K, write down its multiples $K, 2K, 3K, \ldots$, until all digits from 0 to 9 occur at least once on the paper. For example, if $K = 13$, they have to write down 8 integers: $13, 26, 39, 52, 65, 78, 91, 104$. It can be proved that, for any positive integer K, the process will end at some point.

There are N kids in the class and everyone gets a different starting number K_i ($i = 1, 2, \ldots, N$). Can you tell how many numbers each kid has to write down?

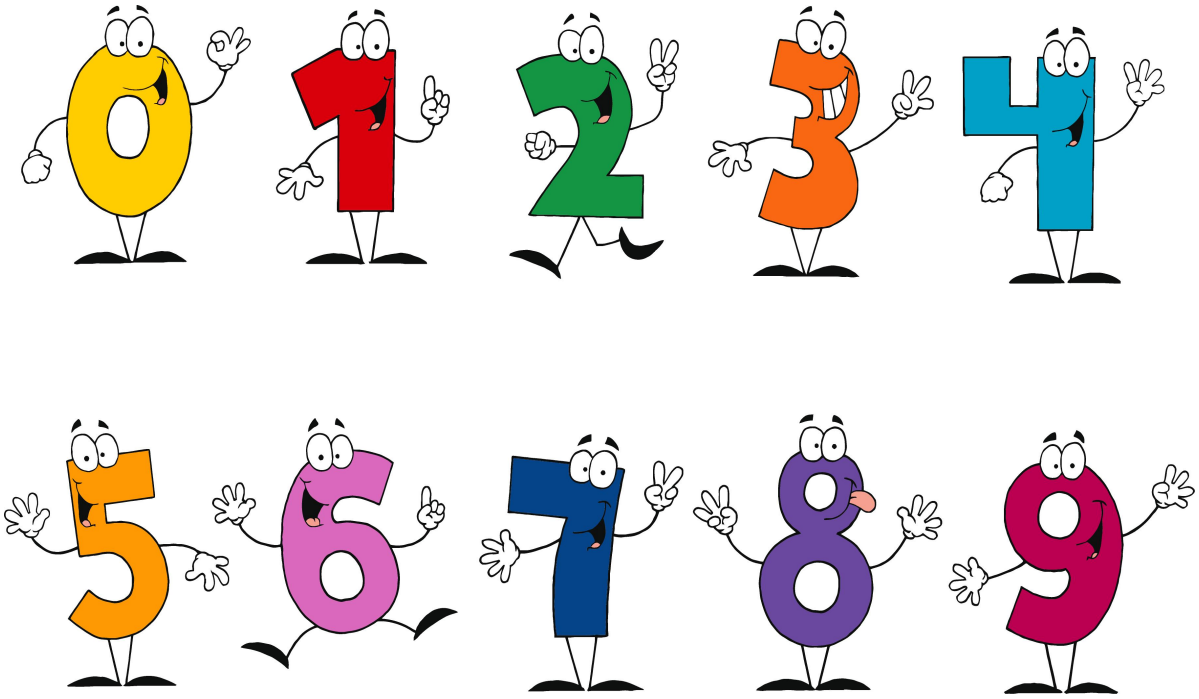

Figure 1: The digits that the kids learn to write

☞ Among the attachments of this task you may find a template file `multiplication.*` with a sample incomplete implementation.

☞ In this problem, you have to answer the same question for many different numbers. Be careful with processing the data and initializing your variables in your solution before calculating each answer.

Input

The first line contains a single integer N, the number of kids. The following N lines each contain a single integer K_i, which is the starting number given to the i^{th} kid.

Output

You need to print N lines, the i^{th} line should contain a single integer, the number of integers that the i^{th}

kid has to write down.

Constraints

- $1 \leq N \leq 100$.
- $1 \leq K_i \leq 10^8$ for each $i = 1, 2, \ldots, N$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (15 points) $1 \leq K_i \leq 10$ for each $i = 1, 2, \ldots, N$.

– **Subtask 3** (25 points) $N = 1$

– **Subtask 4** (20 points) $1 \leq K_i \leq 200$ for each $i = 1, 2, \ldots, N$.

– **Subtask 5** (40 points) No additional limitations.

Examples

input	output
3 5 10 3	18 9 10
2 1234567 3141592	4 5

Explanation

In the **first sample case** the kids have to write down these integers:

- 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, i.e., 18 numbers altogether
- 10, 20, 30, 40, 50, 60, 70, 80, 90, i.e., 9 numbers altogether
- 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, i.e., 10 numbers altogether

In the **second sample case** the kids have to write down these numbers:

- 1234567, 2469134, 3703701, 4938268, i.e., 4 numbers altogether
- 3141592, 6283184, 9424776, 12566368, 15707960, i.e., 5 numbers altogether