Problem A. Minimum Varied Number

Time limit 1000 ms
Mem limit 262144 kB

Find the minimum number with the given sum of digits s such that **all** digits in it are distinct (i.e. all digits are unique).

For example, if $s = 20$, then the answer is 389. This is the minimum number in which all digits are different and the sum of the digits is 20 ($3 + 8 + 9 = 20$).

For the given s print the required number.

Input

The first line contains an integer t ($1 \le t \le 45$) — the number of test cases.

Each test case is specified by a line that contains the only integer s ($1 \le s \le 45$).

Output

Print t integers — the answers to the given test cases.

Examples

Input	Output
4 20 8 45 10	389 8 123456789 19