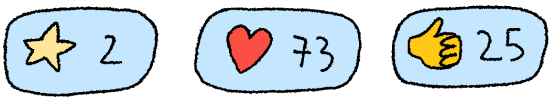
Problem D. Digit Division

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes



You are an infamous blogger with a wide network of channels and groups in some troubled messenger founded by the French entrepreneur Du Rove. To have a recognizable author's style, you give all channels some number-related names, including `itstwofortyfive`, `four`, `two seven three two five`, `twenty five`, `0x6ABD`, and `signed integer overflow`.

You want to launch a new channel, but you ran out of numbers, so you need a new one.

Today your favourite number is k, you want to choose some number n as a new channel name.

You will be satisfied with a channel name n if n has the following properties:

- the number n is divisible by k,
- the sum of all digits in n is k.

You already found all channel names for small values of k, so now you need a program to work with larger numbers.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 1000$). The description of the test cases follows.

Each test case is given on a single line containing one integer k ($1 \le k \le 10^5$).

The sum of k over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output n ($1 \le n \le 10^{20k}$). In case there are multiple answers, output any one of them.

Example

standard input	*standard output*
4 1 9 12 90	1 81 12121212 27325000144500025000400021474836470000