ACM MEXICO REGIONAL 2005
Input File: UselessCounting.in Output: Standard Output
Time Limit: 30 seconds

Problem C
Useless Counting

Given a natural number N less than or equal to 20, your job is to count how many numbers are greater or equal to 1 and less or equal to 10^N such that the sum of the digits of each of such numbers is equal to N. Here ^ denotes the exponential operator.

The Input (UselessCounting.in)

The input consists of several test cases. The first line gives the number (say K) of test cases (a number greater than 0 and less than 10). The second line consists of exactly K numbers. There is a space between any pair of numbers.

The Output (to stdout)

Consists of K numbers, each one is the solution of the corresponding input case. Each number must be given in a separate line as shown in the sample.

Sample Input

```
2
3 2
```

Output for Sample Input

```
10
3
```

Note:

(a) There are exactly 10 numbers greater than or equal to 1 and less or equal to 1000 such that the sum of its digits is 3. These numbers are 3, 21, 12, 30, 111, 201, 102, 300, 210, 120.

(b)There are exactly 3 numbers greater than or equal to 1 and less or equal to 100 such that the sum of their digits is 2. These numbers are 2, 11 and 20.