

Addicted Numbers

Anshuman was playing a game. The game consists of following steps

1. He summed all the digits of a number.
2. Untill the sum became less than 10, he repeats the above step for the new number ie. sum of all the digits of the num

As the numbers are very large you have to help him figure out the final output of the game.

Input

First line of the input contains an integer t , $1 \leq t \leq 10$ denoting the number of testcases, followed by t lines each containing a number n , $1 \leq n \leq 10^{300000}$

Output

For each number n given at input, display a line with the final number.

Example

Input:

```
2
12345
213413512
```

Output:

```
6
4
```

For first testcase $1+2+3+4+5=15$

$1+5=6$