

# Digital Root Counter

The digital root of a number  $x$  is calculated by summing up all digits  $x$ , then adding all digits of the sum and so on, until we are left with only a single digit.

For example, if  $x = 987654$ , then its digital root  $d(x) = 9 + 8 + 7 + 6 + 5 + 4 = 39$ .

Now we sum up digits of 39.  $d(39) = 3 + 9 = 12$ .

Now we sum up digits of 12.  $d(12) = 1 + 2 = 3$ .

Thus,  $d(987654) = 3$ .

## Input

The first line gives the number of test cases  $T$  ( $T \leq 100$ ).

Each of the next  $T$  test cases gives the value of  $N$  ( $N \leq 50,000$ ).

## Output

For each test case, print 10 integers, each separated by a space, indicating number of digital roots in the range of 1 to  $N$  that are equal to  $i$  ( $1 \leq i \leq 9$ ). Separate each test case with a new line.

### Example

Input:

2

12

40

Output:

2 2 2 1 1 1 1 1 1

5 5 5 5 4 4 4 4 4

Explanation:

For the first case, there are 2 numbers in the range of 1 to 12 that have digital root equal to 1 (1 and 10), 2 numbers that have digital root equal to 2 (2 and 11) and so on.