

Dumb Sum

Problem Code: **COUNTKID**



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A smart 3 year old Sandeep knows counting. But he doesn't know how to read and write properly. He has learnt 1, 2, 3 and 4 but thinks that 4 is another way to write 1. So when given any number created with digits 1, 2, 3 and 4, he tries to sum up their digits as follows

- $213 = 2 + 1 + 3 = 6$
- $33 = 3 + 3 = 6$
- $1341 = 1 + 3 + 1 + 1 = 6$ (remember, the kid thinks that $4 = 1$)
- $333444333 = 3 + 3 + 3 + 3 + 1 + 1 + 1 + 3 + 3 + 3 = 22$
- $1111 = 1 + 1 + 1 + 1 = 4$ (note that this 4 is a count. Sandeep confuses digits, not counts)

Sandeep is excited to discover that different numbers can all add up to the same sum. He now wants to know how many numbers there - created using only digits 1, 2, 3 and 4 - whose sum is a number N. For $N = 2$, he can make 5 numbers: 11, 14, 41, 44, and 2. (He knows how to count up to and beyond five, just not how to write it). For $N = 3$, he can make 13 numbers: 111, 114, 141, 144, 411, 414, 441, 444, 12, 21, 42, 24, 3. Note that we only consider numbers created using digits 1, 2, 3 and 4.

He needs your help for other such values of N.

[All Submissions \(/DI17R006/status/COUNTKID\)](#)

Successful Submissions



Input

First line contains a number T ($1 \leq T \leq 10000$), the number of test cases. Each test case contains a single integer N, such that, $0 \leq N \leq 1000$.

Output

For each test case read, output a single integer on a line stating how many numbers Sandeep can make such that the sum of their digits is equal to N. (As the output could be very large, display the result mod (1,000,000,007)). The answer for $N = 0$ should be 0.

Sample Input

```
2
2
3
```

Sample Output

```
5
13
```

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Tags: [directi_campus \(/tags/problems/directi_campus\)](#)

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Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: C, CPP 4.3.2, CPP 6.3, CPP14, JAVA, PYTH, PYTH 3.5

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