

Project Euler #16: Power digit sum

Problem Statement

This problem is a programming version of [Problem 16](#) from [projecteuler.net](#)

$2^9 = 512$ and the sum of its digits is $5 + 1 + 2 = 8$.

What is the sum of the digits of the number 2^N ?

Input Format

The first line contains an integer T , i.e., number of test cases.

Next T lines will contain an integer N .

Output Format

Print the values corresponding to each test case.

Constraints

$$1 \leq T \leq 100$$

$$1 \leq N \leq 10^4$$

Sample Input

```
3
3
4
7
```

Sample Output

```
8
7
11
```