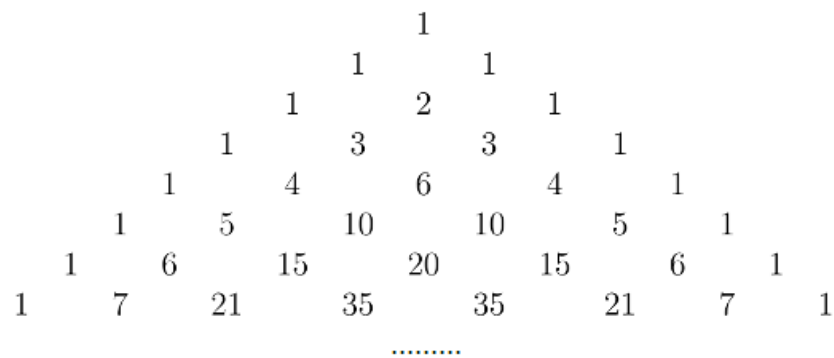


# Project Euler #203: Squarefree Binomial Coefficients

This problem is a programming version of [Problem 203](#) from [projecteuler.net](#)

The [binomial coefficients](#)  ${}^nC_k$  can be arranged in triangular form, Pascal's triangle, like this:



It can be seen that the first eight rows of Pascal's triangle contain twelve distinct numbers:

1, 2, 3, 4, 5, 6, 7, 10, 15, 20, 21 and 35.

A positive integer  $n$  is called squarefree if no square of a prime divides  $n$ . Of the twelve distinct numbers in the first eight rows of Pascal's triangle, all except 4 and 20 are squarefree. The sum of the distinct squarefree numbers in the first eight rows is 105.

Find the sum of the distinct squarefree numbers in the first  $K$  rows of Pascal's triangle.

Since the answer can be huge, output it modulo  $10^9 + 7$ .

## Input Format

First line of each test file contains a single integer  $Q$  which is the number of queries per this file.  $Q$  lines follow each containing a single integer  $K_i$  that is the number of the rows in the Pascal's triangle.

## Constraints

- $1 \leq Q \leq 150$
- $1 \leq K_i \leq 15 \times 10^4$

## Output Format

Output exactly  $Q$  lines with the answer modulo  $10^9 + 7$  for the  $i$ -th query on  $i$ -th line.

## Sample Input 0

```
1
```

**Sample Output 0**

105

**Explanation 0**

$$(1 + 2 + 3 + 5 + 6 + 7 + 10 + 15 + 21 + 35) \bmod (10^9 + 7) = 105$$