

Problem D. Geld

Input file: `geld.in`
Output file: `geld.out`
Time limit: 2 seconds
Memory limit: 256 mebibytes

A *coin system* of order n is a set of positive integers not exceeding n — the denominations of coins. A given amount of money, a positive integer, is *representable* using the given coin system if it's possible to represent it as a sum of some denominations (possibly using one denomination multiple times).

For example, consider the coin system $\{3, 4\}$. It's not hard to see that all positive integers except 1, 2 and 5 are representable, but those are not.

A set of positive integers is called a *cost set* of order n , if there exists a coin system of order n such that all integers from the cost set are representable, and all other positive integers are not representable. For example, $\{3, 4, 6, 7, 8, 9, \dots\}$ is a cost set of order 4, but not a cost set of order 3. Note that the empty set is a cost set of any order, corresponding to the empty coin system.

How many different cost sets of a given order exist?

Input

The first line of the input file contains the number of testcases t , $1 \leq t \leq 63$. Each of the next t lines contains one integer n , $1 \leq n \leq 63$ — the order of the cost sets to be counted.

Output

For each testcase, output the number of different cost sets of order n on a line by itself.

Examples

	<code>geld.in</code>		<code>geld.out</code>
2		2	
1		3	
2			