

# Utopian Tree



The Utopian tree goes through 2 cycles of growth every year. The first growth cycle occurs during the spring, when it doubles in height. The second growth cycle occurs during the summer, when its height increases by 1 meter. Now, a new Utopian tree sapling is planted at the onset of the spring. Its height is 1 meter. Can you find the height of the tree after  $N$  growth cycles?

## Input Format

The first line contains an integer,  $T$ , the number of test cases.  
 $T$  lines follow. Each line contains an integer,  $N$ , that denotes the number of cycles for that test case.

## Constraints

$1 \leq T \leq 10$   
 $0 \leq N \leq 60$

## Output Format

For each test case, print the height of the Utopian tree after  $N$  cycles.

## Sample Input #00:

```
2
0
1
```

## Sample Output #00:

```
1
2
```

## Explanation #00:

There are 2 test cases. When  $N = 0$ , the height of the tree remains unchanged. When  $N = 1$ , the tree doubles its height as it's planted just before the onset of spring.

## Sample Input: #01:

```
2
3
4
```

## Sample Output: #01:

```
6
7
```

## Explanation: #01:

There are 2 testcases.  
 $N = 3$ :  
the height of the tree at the end of the 1<sup>st</sup> cycle = 2  
the height of the tree at the end of the 2<sup>nd</sup> cycle = 3  
the height of the tree at the end of the 3<sup>rd</sup> cycle = 6  
  
 $N = 4$ :  
the height of the tree at the end of the 4<sup>th</sup> cycle = 7