

# **Utopian Tree**



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## **Problem Statement**

The Utopian Tree goes through 2 cycles of growth every year. Each spring, it *doubles* in height. Each summer, its height increases by 1 meter.

Laura plants a Utopian Tree sapling with a height of 1 meter at the onset of spring. How tall will her tree be after N growth cycles?

#### **Input Format**

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

T subsequent lines each contain an integer, N, denoting the number of cycles for that test case.

## **Constraints**

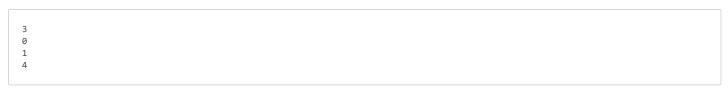
 $1 \le T \le 10$ 

 $0 \le N \le 60$ 

## **Output Format**

For each test case, print the height of the Utopian Tree after N cycles. Each height must be printed on a new line.

#### Sample Input



## **Sample Output**



## **Explanation**

There are 3 test cases.

In the first case (N=0), the initial height (H=1) of the tree remains unchanged.

In the second case (N=1), the tree doubles in height and is 2 meters tall after the spring cycle.

In the third case (N=4), the tree doubles its height in spring (H=2), then grows a meter in summer (H=3), then doubles after the next spring (H=6), and grows another meter after summer (H=7). Thus, at the end of 4 cycles, its

height is 7 meters.

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