

# Strange Counter

Bob has a *strange counter*. At the first second,  $t = 1$ , it displays the number **3**. At each subsequent second, the number displayed by the counter decrements by 1.

The counter counts down in cycles. In the second after the counter counts down to **1**, the number becomes **2**× the initial number for that countdown cycle and then continues counting down from the new initial number in a new cycle. The diagram below shows the counter values for each time  $t$  in the first three cycles:

time	value	time	value	time	value
1	3	4	6	10	12
2	2	5	5	11	11
3	1	6	4	12	10
		7	3	13	9
		8	2	14	8
		9	1	15	7
				...	...
				21	1

Given a time,  $t$ , find and print the value displayed by the counter at time  $t$ .

## Input Format

A single integer denoting the value of  $t$ .

## Constraints

- $1 \leq t \leq 10^{12}$

## Subtask

- $1 \leq t \leq 10^5$  for 60% of the maximum score.

## Output Format

Print the value displayed by the strange counter at the given time  $t$ .

## Sample Input

4

## Sample Output

6

## Explanation

Time  $t = 4$  marks the beginning of the second cycle in which the counter displays a number that is double

the initial number displayed at the beginning of the previous cycle (i.e.,  $2 \times 3 = 6$ ). This is also shown in the diagram in the *Problem Statement* above.