Tower of Hanoi - Yet again

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1.2 seconds
Memory limit:	256 megabytes

The Eastern monks are super elated to have found a solution to transfer their 64 golden rings from the first tower to the third tower- but their newfound enthusiasm didn't last long on finding that it would take roughly 585 billion years to transfer their 64 rings, even if they transfer one ring per second!

In an attempt to prevent the world from coming to an end before their rings are transferred, the monks decided the rules with certain revisions as follows:

1. There are three towers with **N** rings on the first tower

2. Each move consists of taking the upper ring from one of the towers and placing it on top of another tower i.e. a ring can only be moved if it is the uppermost ring on a tower.

3. A larger ring cannot be placed on top of a smaller ring at any point during the transfer.

4. Any number of rings on the second tower can be moved together to another tower in a single move. **Note that this rule only applies to the second tower. Only one ring can be transferred at a time between the other towers or from the other towers onto the second tower.**

The monks now want to find the minimum number of moves **m** required to transfer N rings from the first tower to the third tower.
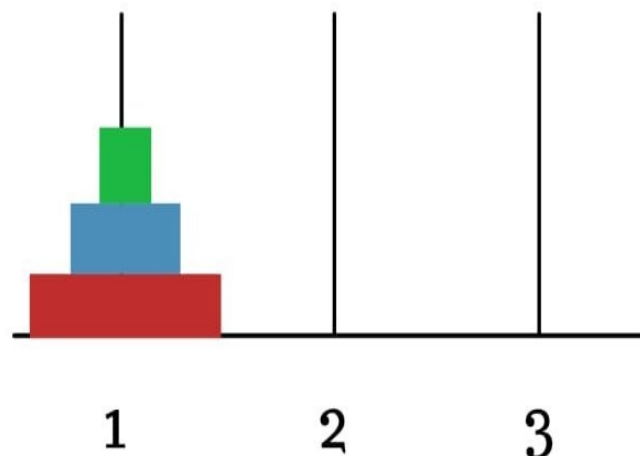
Input

The first lines contain a single integer **N** (0<=N<40) - The number of rings on the first tower.

Output

Output a single number m denoting the minimum number of moves required to transfer **m** rings from the first tower to the third tower, following the new rules.

Example

standard input	standard output
3	5

Note

In the given example, the following steps are followed:

Move the smallest ring from 1st tower to the 3rd tower
Move the second smallest ring from the 1st tower to the 2nd tower
Move the smallest ring from 3rd tower to the 2nd tower
Move the largest ring from 1st tower to the 3rd tower
Move all the rings together from the 2nd tower to the 3rd tower

Total number of moves = 5