https://course.acciojob.com/idle?question=a952a58e-b861-407e-8a23-be4db0a54df6

- MEDIUM
- Max Score: 30 Points

Tower Of Hanoi

The tower of Hanoi is a famous puzzle where we have three rods (rod 1, rod 2 and rod 3) and N disks. The objective of the puzzle is to move the entire stack to another rod. You are given the number of discs N. Initially, these discs are in the rod 1. You need to move all the discs in rod 3 via rod 2. Find the total moves required to move N discs from rod 1 to rod 3 via rod 2 such that you can pick only one disc at a time.

The discs are arranged such that the top disc is numbered 1 and the bottom-most disc is numbered N. Also, all the discs have different sizes and a bigger disc cannot be put on the top of a smaller disc. Refer the provided link to get a better clarity about the puzzle

Input

First line contains a single integer N denoting number of discs

Output

Print the number of steps required to move N discs from rod 1 to rod 3 via rod 2

Example 1

Input

```
3
```

Output

```
7
```

Explanation:

```
For N = 3 , steps will be as follows :
move disk 1 from rod 1 to rod 3
move disk 2 from rod 1 to rod 2
move disk 1 from rod 3 to rod 2
move disk 3 from rod 1 to rod 3
move disk 1 from rod 2 to rod 1
move disk 2 from rod 2 to rod 3
move disk 1 from rod 1 to rod 3
So total number of steps taken = 7
```

Constraints:

```
1 <= N <= 16
```

Topic Tags

- Recursion

My code

```
// n java
import java.util.*;
import java.lang.*;
import java.io.*;

public class Main
{
  static int fun(int n)
  {
    if(n==1) return 1;
    else return(1+fun(n-1)+fun(n-1));
  }
```

```
        public static void main (String[] args) throws
java.lang.Exception
        {
                //your code here
      Scanner s=new Scanner(System.in);
      int n=s.nextInt();
      int m=fun(n);
      System.out.print(m);









        }
}
```