Started on	Thursday, 28 December 2023, 6:22 PM
State	Finished
Completed on	Thursday, 28 December 2023, 7:36 PM
Time taken	1 hour 13 mins

Question **1**

Correct

Marked out of 25.00

Consider a sequence of the form 0, 1, 1, 2, 4, 7, 13, 24, 44, 81, 149...

Write a program which takes input an integer n and prints the nth term of the above sequence. The nth term will fit in an integer value.

Hint: Does this pattern look familiar? Remember the logic for Fibonacci series?

Example Input: 5

Output: 4

Example Input: 8

Output: 24

Example Input: 11

Output: 149

For example:

Input	Result
5	4
8	24
11	149

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class Tribonacci
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();

        int n1=0, n2=1, n3=1,sum=0;

        if(n==1){
            System.out.println(n1);
        }
        else if(n==2){
            System.out.println(n2);
        }
        else if(n==3){
            System.out.println(n3);
        }
        else{
            for(int i=0;i<n-3;i++)
            {
                sum=n1+n2+n3;
                n1=n2;
                n2=n3;
                n3=sum;
            }
            System.out.println(sum);
        }
    }
}
```

	Input	Expected	Got	
✔	5	4	4	✔
✔	8	24	24	✔

	Input	Expected	Got	
✔	11	149	149	✔

Passed all tests! ✔

Question **2**

Correct

Marked out of 25.00

Write a program that takes input an integer n.

You have to print the number of zeros at the end of the factorial of n.

For example, 3! = 6. The number of zeros are 0. 5! = 120. The number of zeros at the end are 1.

Hint: Think about which numbers multiplication leads to a 0 at the end

Note: n! < 10^5

Example Input: 3

Output: 0

Example Input: 60

Output: 14

Example Input: 100

Output: 24

Example Input: 1024

Output: 253

For example:

Input	Result
3	0
60	14
100	24
1024	253

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class Zeros
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();

        int sum=0,q;

        while(n!=0)
        {
            q = n/5;
            sum+=q;
            n = q;
        }
        System.out.println(sum);
    }
}
```

	Input	Expected	Got	
✔	3	0	0	✔
✔	60	14	14	✔
✔	100	24	24	✔

	Input	Expected	Got	
✔	1024	253	253	✔

Passed all tests! ✔

Question **3**

Correct

Marked out of 25.00

Write a program that prints a simple chessboard. You have to read the the size of the chessboard from stdin. Print W for white spaces and B for black spaces.

Input format: The first line contains the number of inputs. The lines after that contain a different values for size of the chessboard

Example Input:

2

3

5

Output:

WBW

BWB

WBW

WBWBW

BWBWB

WBWBW

BWBWB

WBWBW

What does this mean?

Here 2 is the number of inputs.

3 is the first input, and the output for it is

WBW

BWB

WBW

After that, the output for 5 is:

WBWBW

BWBWB

WBWBW

BWBWB

WBWBW

Notice, in the chessboard, the first row's character is W and all the characters after that are alternating.

For example:

Input	Result
2 3 5	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW

Answer: (penalty regime: 0 %)

```
1  import java.util.*;
2  public class Chess
3  {
4      public static void main(String[] args)
5      {
6          Scanner sc = new Scanner(System.in);
7          int ip = sc.nextInt();
```

```
8
9           for(int i=0;i<ip;i++)
10          {
11              int n = sc.nextInt();
12              int k=0;
13              for(int j=0;j<n;j++)
14              {
15                  k=j%2;
16                  for(int m=0;m<n;m++)
17                  {
18                    if(k==0)
19                    {
20                        System.out.print('W');
21                    }
22                    else
23                    {
24                        System.out.print('B');
25                    }
26                    k=(k+1)%2;
27                  }
28                  System.out.println();
29              }
30          }
31      }
32  }
```

	Input	Expected	Got	
✔	2 3 5	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW	WBW BWB WBW WBWBW BWBWB WBWBW BWBWB WBWBW	✔

Passed all tests! ✔

Question **4**

Correct

Marked out of 25.00

Write a program that takes input a positive integer n.

You have to print the largest power of 2 less than or equal to n.

For example, for 10 the largest power of 2 less than or equal to 10 is 8. For 64 largest power of 2 less than or equal to it is 64

Hint: instead of doing ++ in your loops, can you think of a different operator?

Example Input: 1

Output: 1

Example Input: 5

Output: 4

Example Input: 10000

Output: 8192

For example:

Input	Result
1	1

Input	Result
5	4
10000	8192

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class TwoPower
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int prev;
        int s = 1;
        while(s<=n)
        {
            prev=s;
            s*=2;
            if(s>n)
            {
                System.out.println(prev);
                break;
            }
            else if(s==n)
            {
                System.out.println(s);
                break;
            }
        }

    }
}
```

	Input	Expected	Got	
✔	1	1	1	✔
✔	5	4	4	✔
✔	10000	8192	8192	✔

Passed all tests! ✔