Started on	Friday, 25 October 2024, 1:20 PM
State	Finished
Completed on	Friday, 25 October 2024, 1:39 PM
Time taken	18 mins 39 secs
Grade	**80.00** out of 100.00

Question **1**

Correct

Mark 20.00 out of 20.00

Write a Python program to find the product of all elements in the list

For example:

Test	Input	Result
print(prod_list(l,len(l)-1))	4 12 13 10 4	6240

Answer: (penalty regime: 0 %)

Reset answer

```
def prod_list(l,length):
    if length ==0:
        return l[0]
    return l[length] * prod_list(l,length-1)


l=[]
n=int(input())
for i in range(n):
    x=int(input())
    l.append(x)
```

	Test	Input	Expected	Got	
✔	print(prod_list(l,len(l)-1))	4 12 13 10 4	6240	6240	✔
✔	print(prod_list(l,len(l)-1))	6 1 2 3 4 5 6	720	720	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Not answered

Mark 0.00 out of 20.00

Write a python program that asks the user to enter an integer n and return a dictionary whose keys are integers 1, 2, 3, ... n and whose values are 1! , 2! , 3! , ... , n!

For example:

Input	Result
6	The obtained dictionary is d = {1: 1, 2: 2, 3: 6, 4: 24, 5: 120}

Answer: (penalty regime: 0 %)

```
1
```

Question **3**

Correct

Mark 20.00 out of 20.00

Write a Python program to find the result of a! - b! using recursion

For example:

Input	Result
6 3	714

Answer: (penalty regime: 0 %)

```
def factorial(n):
    if n==0:
        return 1
    return (n* factorial(n-1))

a=int(input())
b=int(input())
c=factorial(a)-factorial(b)
print(c)
```

	Input	Expected	Got	
✔	6 3	714	714	✔
✔	4 3	18	18	✔
✔	5 0	119	119	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out of 20.00

1. **A. Write a Python Program to convert a decimal number to a binary number using tail recursion.**

For example:

Input	Result
12	1100

Answer: (penalty regime: 0 %)

```
def binary_decimal(n):
    if n==0:
        return 0
    return (n%2)+10 * int(binary_decimal(n//2))

n=int(input())
print(binary_decimal(n))
```

	Input	Expected	Got	
✔	20	10100	10100	✔
✔	12	1100	1100	✔
✔	36	100100	100100	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Correct

Mark 20.00 out of 20.00

Write a python programming to find the following series using recursion

$$\sum_0^n \frac{(-1)^k x^{2k+1}}{2k+1}$$

For example:

Input	Result
0.8 5	0.6720140684892352

Answer: (penalty regime: 0 %)

```
def fact(x,k):
    if k==0:
        return x
    return((-1)**k)*(x**(2*k+1))/(2*k+1) + fact(x,k-1)

x=float(input())
k=int(input())
print(fact(x,k))
```

	Input	Expected	Got	
✔	0.8 5	0.6720140684892352	0.6720140684892352	✔
✔	0.4 4	0.3805097366349207	0.3805097366349207	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.