PROGRAMMING
EASY: 10 PTS

1. Write a program in C++ to display the operation of pre and post increment and decrement.

Sample Output

Display the operation of pre and post increment and decrement.
The number is : 57
After post increment by 1 the number is : 58
After pre increment by 1 the number is : 59
After increasing by 1 the number is : 60
After post decrement by 1 the number is : 59
After pre decrement by 1 the number is : 58
After decreasing by 1 the number is : 57

Answer:

```cpp
#include <iostream>
using namespace std;

int main()
{
  int num = 57;
  cout << "\n\n Display the operation of pre and post increment and
        decrement :\n";
  cout << "----------------------------------------------------------------\n";
  cout <<" The number is : " << num << endl;
  num++;           // increase by 1 (post-increment)
  cout <<" After post increment by 1 the number is : " << num << endl;
  ++num;           // increase by 1 (pre-increment)
  cout <<" After pre increment by 1 the number is : " << num << endl;
  num = num + 1;  // num is now increased by 1.
  cout <<" After increasing by 1 the number is : " << num << endl; // 79
  num--;           // decrease by 1 (post-decrement)
  cout <<" After post decrement by 1 the number is : " << num << endl;
  --num;           // decrease by 1 (pre-decrement)
  cout <<" After pre decrement by 1 the number is : " << num << endl;
```

```
num = num - 1; // num is now decreased by 1.
cout <<" After decreasing by 1 the number is : " << num << endl;
cout << endl;
return 0;
}
```

2. Write a program in C++ to find the area and circumference of a circle.
   Formula circumference = 2 x PI x Radius
   Sample Output:
   Find the area and circumference of any circle :
   Input the radius(1/2 of diameter) of a circle : 5
   The area of the circle is : 78.5397
   The circumference of the circle is : 31.4159

   Answer:

```cpp
#include <iostream>
#define PI 3.14159
using namespace std;

int main()
{
    float radius, area, circum;
    cout << "\n\n Find the area and circumference of any circle \n";
    cout << "-------------------------------------------------\n";
    cout<< " Input the radius(1/2 of diameter) of a circle : ";
    cin>>radius;
    circum = 2*PI*radius;
    area = PI*(radius*radius);
    cout<< " The area of the circle is : "<< area << endl;
    cout<< " The circumference of the circle is : "<< circum << endl;
    cout << endl;
    return 0;  }
```

3. Write a program in C++ to compute quotient and remainder.
   Sample Output:
   Compute quotient and remainder :
   Input the dividend : 25
   Input the divisor : 3
   The quotient of the division is : 8
   The remainder of the division is : 1

Answer
```cpp
#include <iostream>
using namespace std;

int main() {
    int dividend, divisor, quotient,remainder;
    cout << "\n\n Compute quotient and remainder :\n";
    cout<<" Input the dividend : ";
    cin>>dividend;
    cout<<" Input the divisor : ";
    cin>>divisor;
        quotient=dividend / divisor;
        remainder=dividend % divisor;
    cout<<" The quotient of the division is : "<< quotient << endl;
    cout<<" The remainder of the division is : "<< remainder << endl;
    cout << endl;
    return 0; }
```

4. Write a program in C++ to compute the total and average of four
   numbers.
   Sample Output:
   Compute the total and average of four numbers :
   Input 1st two numbers (separated by space) : 25 20
   Input last two numbers (separated by space) : 15 25
   The total of four numbers is : 85
   The average of four numbers is : 21.25

Answer

```cpp
include <iostream>
using namespace std;

int main()
{
    float n1,n2,n3,n4,tot,avrg;
    cout << "\n\n Compute the total and average of four numbers \n";
    cout<<" Input 1st two numbers (separated by space) : ";
    cin>> n1 >> n2;
    cout<<" Input last two numbers (separated by space) : ";
    cin>> n3 >> n4;
    tot=n1+n2+n3+n4;
    avrg=tot/4;
    cout<<" The total of four numbers is : "<< tot << endl;
    cout<<" The average of four numbers is : "<< avrg << endl;
    cout << endl;
    return 0; }
```

5. Write a program in C++ to check whether a number is positive,
    negative or zero. Go to the editor
    Sample Output:
    Check whether a number is positive, negative or zero :
    Input a number : 8
    The entered number is positive.

Answer
```cpp
#include <iostream>
using namespace std;

int main()
{
signed long num1 = 0;
```

```cpp
cout << "\n\n Check whether a number is positive, negative or zero :\n";
cout << " Input a number : ";
cin >> num1;
if(num1 > 0)
  { cout << " The entered number is positive.\n\n"; }
else (num1 < 0)
  { cout << " The entered number is negative.\n\n"; }
else
  { std::cout << " The number is zero.\n\n"; }
return 0; }
```

AVERAGE

6. Write a program in C++ that will ask the user to enter a number continuously, the program will stop or terminate if the number entered is equal to 50.

Sample Output
Enter a number = 10
Enter a number = 20
Enter a number = 30
Enter a number = 40
Enter a number = 50
The program terminates now...

Answer
```cpp
#include <iostream>
using namespace std;

int main()
{
int number=0;
do{
cout<< "Enter a number=";
cin>> number;
}while(number!=50);
```

```cpp
    return 0;
}
```

7. Write a program in C++ that will compute the sum of all even and odd numbers, given in the set of numbers (10,12,5,3,1,9,4,6,8,7)

Sample Output:
The given numbers are : 10 12 5 3 1 9 4 6 8 7
Total Even = 40
Odd numbers are : 5 3 1 9 7
Total Odd = 25

Solution:

```cpp
#include <iostream>
using namespace std;

int main(){
int sumE=0,sumO=0;
int myArray[]={10,12,5,3,1,9,4,6,8,7};

for(int x=0;x<10;x++){
    if(myArray[x]%2==0){
        sumE+=myArray[x];
    }else{
        sumO+=myArray[x];
    }
}

cout<<"The numbers are 10 12 5 3 1 9 4 6 8 7"<<endl;
cout<<"Total Even="<<sumE<<endl;
cout<<"Total Odd="<<sumO<<endl;

}
```

6

8. Create a C++ program using loop statement that will display the sample output below.

Sample Output:
```
12345
12345
12345
12345
12345
```

Solution:
```cpp
#include<iostream>
using namespace std;

int main(){
    for(int line=1; line<=5;line++){
        for(int num=1; num<=5;num++){
            cout<<num;
        }
        cout<<endl;
    }

    return 0; }
```

9. Create a C++ program using loop statement that will display the sample output below.

Sample Output:
```
1
12
123
1234
12345
```

Solution:

```cpp
#include<iostream>
using namespace std;

int main(){
    for(int line=1; line<=5;line++){
        for(int num=1; num<=line;num++){
            cout<<num;
        }
        cout<<endl;
    }

    return 0;
}
```

10.   Create a C++ program using loop statement that will display the sample output below.

Sample Output:
12345
1234
123
12
1

Solution:

```cpp
#include<iostream>
using namespace std;

int main(){
    int dis=5;
    for(int line=1; line<=5;line++){
        for(int num=1; num<=dis;num++){
```

8

```cpp
            cout<<num;
        }
        cout<<endl;
        dis--;
    }
    return 0;}
```

DIFFICULT

11.   Create a C++ program using Array that will display the sample output below.

Sample Output:

```
Enter a letter =A
Enter a letter =B
Enter letter =C
Enter a letter =D
Enter  letter =E


The letters are...
-------  --------------------------

A B C D E
```

Solution :

```cpp
#include<iostream>
using namespace std;

int main(){
    char letter[5];
    for(int x=0; x<5; x++){
        cout<<"Enter a letter =";
        cin>>letter[x];
    }
    cout<<endl;
    cout<<"The letters are .."<<endl;
```

```
cout<<"----------------------"<<endl;
out<<endl;
r(int j=0; j<5; j++){
     cout<<letter[j]<<" ";

eturn 0;
}
```