PROGRAMMING FUNDAMENTAL LAB

SUBMITTED TO: SIR BILAL DAR

SUBMITTED BY: MAIRA EMAAN NASIR

REG NO: 2430-0153

LAB TASK: 05

Question: 01

Write a program to print the numbers from 1 to 5 using a for loop.

CODE:

```cpp
1  #include <iostream>
2  using namespace std;
3  int main() {
4      for (int i=1;i<=5;i++)
5      {
6          cout<<i<<"\n";
7      }
8      return 0;
9  }
```

OUTPUT:

```
/tmp/INOmUtwhMU.o
1
2
3
4
5


=== Code Execution Successful ===
```

Question: 02

Write a program to find the sum of the first n numbers. The value of n should be provided by the user.

CODE:

```cpp
main.cpp                                      Share    Run

1   #include <iostream>
2   using namespace std;
3 - int main() {
4       int n;
5       cout<<"Enter a natural number"<<"\n";
6       cin>>n;
7       int sum;
8       for (int i =1;i<=n;i++)
9 -     {
10          sum =sum+i;
11          cout<<sum<<"\n";
12      }
13      return 0;
14  }
15
```

OUTPUT:

Output   Clear

```
/tmp/anHwA8dIhA.o
Enter a natural number
9
1
3
6
10
15
21
28
36
45


=== Code Execution Successful ===
```

Question: 03

Write a program that takes a number …… user enter 5.

CODE:

```cpp
main.cpp

1    #include <iostream>
2    using namespace std;
3 ▾  int main() {
4        int num;
5        cout<<"Enter a number"<<"\n";
6        cin>>num;
7        int sum;
8        for (int i =1;i<=10;i++)
9 ▾      {
10           cout<<num<<"x"<<i<<"="<<num*i<<"\n";
11       }
12       return 0;
13   }
```

OUTPUT:

```
Output                                          Clear

/tmp/vVGfwaklxo.o
Enter a number
7
7x1=7
7x2=14
7x3=21
7x4=28
7x5=35
7x6=42
7x7=49
7x8=56
7x9=63
7x10=70


=== Code Execution Successful ===
```

Question: 04

Write a program that prints…… using for loop.

CODE:

```cpp
main.cpp                                              Share    Run

1   #include <iostream>
2   using namespace std;
3 ▾ int main() {
4 ▾     for (int i =1;i<=20;i++){
5
6 ▾         if (i %2==0){
7               cout<<i<<"\n";
8           }
9       }
10      return 0;
11  }
```

OUTPUT:

```
Output                                                     Clear

/tmp/neYaUYa0Mp.o
2
4
6
8
10
12
14
16
18
20


=== Code Execution Successful ===
```

Question: 05

Write a program that prints the number…… 10 to 1.

CODE:

```cpp
1  #include <iostream>
2  using namespace std;
3  int main() {
4      for (int i =10;i>=1;i--){
5
6          cout<<i<<" ";
7      }
8  }
9
```

OUTPUT:

```
/tmp/vOcnpYguQB.o
10 9 8 7 6 5 4 3 2 1

=== Code Execution Successful ===
```

Question: 06

Write a program in C++ to display the cube of the number up to an integer.

CODE:

```cpp
1  #include <iostream>
2  using namespace std;
3  int main() {
4      for (int i =1;i<=5;i++)
5      {
6        cout<<i*i*i<<"\n";
7      }
8  }
9
```

OUTPUT:

```
/tmp/QIqL86SYPN.o
1
8
27
64
125


=== Code Execution Successful ===
```

Question: 07

Display the corresponding grade for each student based on the entered marks. Display the appropriate grade.

CODE:

```cpp
1   #include <iostream>
2   using namespace std;
3 ▾ int main() {
4       int n,i  ,marks;
5       int sum=0;
6       cout<<"Enter the number of subjects;"<<"\n";
7       cin>>n;
8 ▾     for(int i=1;i<=n;i++){
9           cout<<"Enter the number:"<<"\n";
10          cin>>marks;
11          sum=sum+marks;
12      }
13      float average=sum/n;
14  cout<<"Average:"<<average<<"\n";
15 ▾    if(average>=90&&average<=100){
16      cout<<"Grade A+";
17      }
18 ▾    else if (average>=80&&average<=90){
19      cout<<"Grade A";
20      }
21 ▾    else if (average>=70&&average<=80){
22      cout<<"Grade B";
23      }
24 ▾    else if (average>=60&&average<=70){
25      cout<<"Grade C";
```

```cpp
25      cout<<"Grade C";
26      }
27      else
28      cout<<"Grade F";
29      }
```

OUTPUT:

Output

```
/tmp/ri7ESvvIPJ.o
Enter the number of subjects;
6
Enter the number:
90
Enter the number:
95
Enter the number:
69
Enter the number:
78
Enter the number:
98
Enter the number:
85
Average:85
Grade A

=== Code Execution Successful ===
```