Sheet No.3

Due Date: One week after your lab session- Complete by yourself.

Exercise 1:

Write a C++ program to calculate factorial *n*.

$n! = n \times (n-1) \times (n-2) \times \ldots \times 3 \times 2 \times 1$

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Exercise 2:

Write a C++ program that reads in a umber and gives the shown output:

Enter a number : 8

the number 8 is devisable the numbers 1, 2, 4, 8

Enter a number : 45

the number 45 is devisable the numbers 1, 3, 5, 9, 15, 45

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Exercise 3:

Write a program to display the following numbers

3 6 9 12 15 ..... .

Exercise 4:

Write a program to get the average of 100 numbers.

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Exercise 5:

1- Write a program to print the following

x	**x^2**	**x^3 +5**
1	1	6
2	4	13
3	9	32
4	16	69
5	25	130

Exercise 6:

Write a program to generate the following table, formatting it into 10 columns.

7	**14**	**21**	**28**	**35**	**42**	**49**	**56**	**63**	**70**
77	**84**	**91**	**98**	**105**	**112**	**119**	**129**	**133**	**140**
147	**154**	**161**	**168**	**175**	**182**	**189**	**196**	**203**	**210**

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Exercise 7:

Use for loops to construct a program that displays a pyramid of Xs on the screen. The pyramid should look like this

```
X
XXX
XXXXX
XXXXXXX
XXXXXXXXX
```

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Exercise 8:

Write the exact output for the following programs:

a.	#include<iostream.h>
	main ( )
	{ int i, k;
	for(i=1;i<4;i++)
	for(k=1;k<3;k++)
	cout<<i+k<<" "; }
		b.	#include<iostream.h>
			main( )
			{ int first=4, last=6, s=1;
			for(int i=first;i<last;i++)
			{s=s+i;
			cout<<s<<endl;} }

c.	#include<iostream.h>
	main ( )
	{ int i;
	char letter='Z';
	for(i=26;i>0;i--)
	cout<< letter--; }
		d.	#include<iostream.h>
			main( )
			{ for(int j=81;j>=1;j/=3)
			cout<<j<<"\n";
			}

e.

```
#include<iostream.h>
 main(  )
   { int i;
     for(i=1;i<7;i++)
       {
        if(i==3)
         continue;
         cout<<i<<endl;
       }
     }
```

f.

```
#include<iostream.h>
main(  )
  { int i;
    for(i=1;i<7;i++)
      {
        if(i<=3)
        continue;
        cout<<i<<endl;
      }
   }
```

g.

```
#include<iostream.h>
 main (  )
   { int i;
     for(i=1;i<7;i++)
     {
      if(i<4)
      break;
      cout<<i<<endl;
      }
   }
```

h.

```
#include<iostream.h>
 main(  )
   { int i;
     for(i=1;i<7;i++)
     {
      if(i==4)
       break;
       cout<<i<<endl;
      }
   }
```

i.

```
#include<iostream.h>
main ( )
 {
  char start='A' , stop ='E' ,
  index ;
 index = ++start;
 while ( index < stop)
    {
     cout<<index<< "\n" ;
     index++ ;
    }
  cout<<++index;
 }
```

j.

```
#include<iostream.h>
 main(  )
  {
 int start=3  , stop =9  ,
  index ;
  index = start;
    while ( index < stop)
      {
       cout<<index<< "\n" ;
       index++ ;

       }

    }
```

Exercise 9:

Write a program to print even numbers (0 : 100).

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Exercise 10:

write a C++ program to print number of zeros of a series of 10 numbers entered by the user.

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Exercise 11:

write a C++ program to print number of values > 10 of a series of 10 numbers entered by the user.

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Exercise 12:

Write a C++ program to accept 10 numbers from the user and calculate how many even numbers and how many odd numbers.

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Exercise 13:

Write a C++ program to accept 10 numbers from the user and calculate the sum of the factorials of these numbers. (Your program should check for the negative numbers and zeros.)

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Exercise 14:

Write a program that gives the sum of squares of numbers from 10 to 20.

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Exercise 15:

Write a program to calculate the value of sin(x).