1. WAP in C++ to find factorial of a number using functions
- No argument no return value
- With argument no return value
- No argument with return value, - with argument with return value

```
#include <iostream>
using namespace std;
void fact()
{
  int n;
  int k=1;
  cout<<" Enter the no. from you want the factorial"<<endl;
  cin>>n;
  for(int i=1; i<=n;i++)
   {
     k=k*i;
   }
  cout<<" The factorial of "<<n<<" with no argument and
  Return value is "<<k<<endl;
  }

Void factorial(int n)
{ int y=1;
  for(int i=1;i<=n,i++)
  {
    y=y*i;
  }
 cout<<"The factorial of "<<n<<" with argument and no
    return value is "<<y<<endl;
 }
  int factorial return1)
{  int n,
  int k=1;
  cout<<" Enter the no. from you want the factorial "<<endl;
  cin>>n;
  for(int i=1; i<=n; i++)
   {
     k=k*i;
  } return k;
}
```

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```
int f (int n)
{ int y=1;
  for (int i=1; i<=n ; i++)
{  y = y * i;
}
  return y;
}
int main(){
    fact();
    int p, q;
    Cout << " Enter the no. from you want the factorial " << endl;
    Cin >> p;
    factorial(p);
    int m = factorialreturn();
    Cout << " The factorial of is no argument and with xturn value"
                                          << m << endl;
    Cout << " Enter the no. from you want the factorial" << endl;
    Cin >> q;
    int l = f(q)
    Cout << " The factorial with argument and return value
                of is " << l << endl;
    return 0;
}
```

Output

Enter the no. from you want the factorial
5
The factorial of 5 with no argument and return value is 120.
Enter the no. from you want the factorial
4
The factorial of 4 with argument and no return value is 24.
Enter the no. from you want the factorial
3
The factorial of is no argument and with return value is 6
Enter the no from you want the factorial
2
The factorial with argument and return value of is 2.

Q2 WAP in C++ using function that takes two nos. and displays prime no. b/w them.

```
#include <iostream>
using namespace std;
int checkPrimeNumber(int n);
int main(){
 int n1, n2, i, flag;
 cout << "Enter two positive integers : "<<endl;
 cin >> n1>>n2;
 cout << " Prime numbers between "<<n1<<"and "<< n2 <<" are: "
                                                  <<endl;
 for (i = n1 +1 ; i < n2 ; ++i)
  {
    flag = checkPrimeNumber (i);
    if (flag==1)
    cout <<" "<<i;
  }
  return 0;
}

int checkPrimeNumber (int n)
{
   int j , flag = 1;
  for (j = 2 ; j <= n/2 ; j++)
  {
     if (n % j == 0) {
        flag = 0;
        break;
     }
  } return flag;
}
```

Output - Enter two positive integers:

1 20

Prime number between 1 and 20 are;

2 3 5 7 11 13 17 19

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3. WAP in C++ using functions to add, subtract, multiply, and divide two complex numbers

```
#include <iostream>
using namespace std;
Void result (int a, int b, int c, int b1)
{
  Cout << "the number is " << a << "+" << b << "i" << endl;
  Cout << " the number is " << a1 << " + " << b1 << " i " << endl;
}
Void sumcomplex (int a, int b, int a1, int b1)
{
  int K, m;
    K = a + a1;
    m = b + b1;
    Cout << " the sum is " << K << " +" << m << " i " << endl;
}
Void productcomplex (int a, int b, int a1, int b1)
{
  int K, m;
  K = a * a1 - b * b1;
  m = a * b1 + b * a1;
  Cout << " the product numbis is " << K << " + " << m << "+" << endl;
}
Void subtractcomplex ( int a, int b, int a1, int b1)
{
  int K, m;
  K = a - a1;
  m = b - b1;
  Cout << " the subtraction is " << K << " + " << m << " i " << endl;
}
Void dividecomplex (int a, int b, int c, int d)
{
  float K = (a*c + b*d);
  float L = (c*c + d*d);
  float i = (b*c - a*d);
  Cout << " The divison of complex numbers is " << K/L << " + " << i/L << " i " << endl
```

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```
int main()
{
    int a, b, c, d;
cout << "enter the real part of 1st complex no." << endl;
cin >> a;
cout << " Enter the imaginary part of 1st complex no." << endl;
cin >> b;
cout << " Enter the real part of 2nd complex no. " << endl;
cin >> c;
cout << " Enter the imaginary part of 2nd complex no. " << endl;
cin >> d;
result (a, b, c, d);
sumcomplex (a, b, c, d);
productcomplex (a, b, c, d);
subtractcomplex (a, b, c, d);
dividecomplex (a, b, c, d);

    return 0;
}
```

Output:

```
Enter real part of 1st complex no.
1
Enter the imaginary part of 1st complex no.
2
Enter the real part of 2nd complex no.
3
Enter the imaginary part of 2nd complex no.
4
The number is 1 + 2i
The number is 3 + 4i
The sum is 4 + 6i
The product number is -5 + 10i
The subtraction is -2 + (-2i)
The divison of complex number is 0.44 + 0.08i
```

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Q. 1 WAP in C++ using a recursive function that adds first n natural no.

```
#include <iostream>
using namespace std;
int sum(int n)
{ if (n==0)
  { return 0;
  }
   return n + sum(n-1);
  }
 int main()
 {  int n, k;
  cout<<" Enter the number upto which you want the sum"<<endl
  cin>> n;
   k = sum(n);
 cout << " The sum of "<< n<<" numbers is "<< k<<endl;
  return 0;
 }
```

Output -

Enter the number upto which you want the sum

10

The sum of 10 numbers is 55.

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