

1. Write a program that has a float function triangle() that computes the area of a triangle and rectangle using its two formal parameters h and w, where h is the height and w is the length of the bases of the triangle.

```
#include <iostream>

#include <cmath>

using namespace std;

float triangle(float height, float base)
{
    float triangleArea = 0.5 * height * base;
    float rectangleArea = height * base;
    cout << "The area of the triangle is " << triangleArea << endl;
    cout << "The area of the rectangle is " << rectangleArea << endl;
    return triangleArea;
}

int main()
{
    float height, base;
    cout << "Enter the height of the triangle: ";
    cin >> height;
    cout << "Enter the base of the triangle: ";
    cin >> base;
    triangle(height, base);
    return 0;
}
```

2. Write a program that accepts a positive integer from the user and displays the factorial of the given number. You should use a recursive function called factorial () to calculate the factorial of the number.

```

#include<iostream>

using namespace std;

int factorial(int n){

if(n==0 || n==1){
return 1;
}
else{
return n*factorial(n-1);
}
}

int main(){
int num;

cout<<"Enter a positive integer: ";

cin>>num;

if(num<0){
cout<<"Invalid input! Enter a positive integer.";
}
else{
cout<<"Factorial of "<<num<<" is "<<factorial(num)<<endl;
}

return 0;
}

```

3. Write a function called isPrime() that accepts a number and determine whether the number is prime or not.

```
#include <iostream>

bool isPrime(int num) {
    if (num <= 1) {
        return false;
    }
    for (int i = 2; i <= num / 2; i++) { // check all possible factors
        if (num % i == 0) {
            return false;
        }
    }
    return true;
}

int main() {
    int num;

    std::cout << "Enter a number: ";

    std::cin >> num;

    if (isPrime(num)) {
        std::cout << num << " is a prime number.\n";
    } else {
        std::cout << num << " is not a prime number.\n";
    }

    return 0;
}
```