1. Write a C++ Program to create a class as COMPLEX and implement the following by overloading the function ADD() which returns the Complex numbers

a) ADD(C1, C2); C1 is an integer ; C2 is a Complex number.

b) ADD(C1, C2); C1 and C2 are Complex numbers.

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

class COMPLEX
{private:
    float real;
float imag;

  public:
     COMPLEX() { // default constructor
  real = 0;
  imag = 0;
  }
    COMPLEX(float r, float i) { // parameterized constructor
    real = r;
    imag = i;
    }
    COMPLEX(int r) { // constructor with integer input
    real = r;
    imag = 0;
    }
    COMPLEX ADD(COMPLEX C) { // ADD() function for adding two Complex numbers
    COMPLEX res;
    res.real = real + C.real;
    res.imag = imag + C.imag;
    return res;
    }
```

```
        COMPLEX ADD(int r) {   // ADD() function for adding an integer and a Complex
number
COMPLEX res;
        res.real = real + r;
res.imag  =  imag;
return res;
}

     void display() { // function to display Complex number
     if(imag < 0)
     cout << real << " - i" << abs(imag) << endl;
     else
     cout << real << " + i" << imag << endl;
     }
};

int main()
  { COMPLEX C1(4,
  5);
  COMPLEX C2(3, -2);
COMPLEX C3;

  cout << "C1 = ";
  C1.display();

  cout << "C2 = ";
  C2.display();

  C3 = C1.ADD(C2); // Adding two Complex numbers
  cout << "C1 + C2 = ";
  C3.display();

  C3 = C1.ADD(2); // Adding an integer and a Complex number
  cout << "C1 + 2 = ";
  C3.display();
```

```
    return 0;
}
```

OUTPUT