**Experiment 9**

**Aim:** Write a programme to implement various operations on complex numbers.

**code:**

#include <iostream>

#include <math.h>

using namespace std;

class complex

{

float real, img;

public:

complex() {

real = 0;

img = 0;

}

complex(float rl, float im) {

real = rl; img = im;

}

void add(complex &c1, complex &c2) {

real = c1.real + c2.real;

img = c1.img + c2.img;

cout << " \n THE SUM OF THE TWO NUMBER IS : " ;

cout << real << " + i" << img;

cout << "\n";

}

void diff(complex &c1, complex &c2) {

real = c1.real - c2.real;

img = c1.img - c2.img;

cout << " \n THE DIFFERENCE OF THE TWO NUMBER IS AS : " ;

cout << real << " + i" << img;

cout << "\n";

}

void mul(complex &c1, complex &c2) {

real = c1.real \* c2.real - c1.img \* c2.img;

img = c1.real \* c2.img + c1.img \* c2.real;

cout << " \n THE PRODUCT OF THE TWO NUMBER IS AS : " ;

cout << real << " + i" << img;

cout << "\n";

}

void div(complex &c1, complex &c2) {

float res1 = pow(c2.real, 2);

float res2 = pow(c2.img, 2);

float con = res1 + res2;

real = (c1.real \* c2.real - c1.img \* c2.img) / con;

img = (c1.real \* c2.img + c1.img \* c2.real) / con;

cout << " \n THE DIVISION OF THE TWO NUMBER IS AS : " ;

cout << real << " + i" << img;

cout << "\n";

}

};

int main() {

int r1, i1, r2, i2;

cout << "Enter the real part of first complex\n";

cin >> r1;

cout << "Enter the imaginery part of first complex\n";

cin >> i1;

cout << "Enter the real part of second complex\n";

cin >> r2;

cout << "Enter the imaginary part of second complex\n";

cin >> i2;

complex a(r1, i1);

complex b(r2, i2);

complex res;

res.add(a, b);

res.diff(a, b);

res.mul(a, b);

res.div(a, b);

return 0;

}