**Write a class to store x, y, and z coordinates of a point in three-dimensional space. Using operator overloading, write friend functions to add, and subtract the vectors.**

**#include <iostream>**

**using namespace std;**

**#define SUCCESS 0**

**class Coordinate{**

**private:**

**float x, y, z;**

**public:**

**Coordinate(float a, float b, float c):x(a),y(b),z(c){};**

**friend Coordinate operator+(Coordinate a, Coordinate b);**

**friend Coordinate operator-(Coordinate a, Coordinate b);**

**void display()**

**{**

**cout << "(" << x << "," << y << "," << z << ")";**

**}**

**};**

**Coordinate operator+(Coordinate a, Coordinate b)**

**{**

**Coordinate temp(a.x+b.x, a.y+b.y, a.z+b.z);**

**return temp;**

**};**

**Coordinate operator-(Coordinate a, Coordinate b)**

**{**

**Coordinate temp(a.x-b.x, a.y-b.y, a.z-b.z);**

**return temp;**

**};**

**using namespace std;**

**int main()**

**{**

**int x , y, z;**

**char temp; // garbage value of ,**

**cout << "Enter cordinate x y z in format x,y,z";**

**cin >> x >> temp >> y>> temp >> z;**

**Coordinate a(x,y,z);**

**cout << "Enter cordinate x y in format x,y";**

**cin >> x >> temp >> y >> temp >>z;**

**Coordinate b(x,y,z);**

**cout << "sum is";**

**Coordinate s = a+b;**

**s.display();**

**cout << endl;**

**cout << "difference is";**

**Coordinate d = a-b;**

**d.display();**

**return SUCCESS;**

**}**

**#include<iostream>//or**

**using namespace std;**

**class cls2;**

**class cls1**

**{**

**int x,y,z;**

**public:**

**cls1(int ix,int iy, int iz)**

**{**

**x=ix;**

**y=iy;**

**z=iz;**

**}**

**friend void operator + (cls1,cls2);**

**friend void operator - (cls1,cls2);**

**};**

**class cls2**

**{**

**int x,y,z;**

**public:**

**cls2(int ix,int iy, int iz)**

**{**

**x=ix;**

**y=iy;**

**z=iz;**

**}**

**friend void operator + (cls1,cls2);**

**friend void operator - (cls1,cls2);**

**};**

**void operator + (cls1 c1, cls2 c2)**

**{**

**cout<<"Sum = ("<<c1.x+c2.x<<','<<c1.y+c2.y<<','<<c1.z+c2.z<<')'<<endl;**

**}**

**void operator - (cls1 c1, cls2 c2)**

**{**

**cout<<"Difference = ("<<c1.x-c2.x<<','<<c1.y-c2.y<<','<<c1.z-c2.z<<')'<<endl;**

**}**

**int main()**

**{**

**cls1 c1(1,2,3);**

**cls2 c2(4,5,6);**

**c1+c2;**

**c1-c2;**

**}**