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;
}
```