1. A Vertex represents an ordered pair of x-coordinate and y-coordinate describing a position in XY-plane. Add suitable get and set operations and add a method to calculate the distance between two vertices.  
   Create another class Line. Provide suitable get and set methods. The responsibilities of Line class are:  
     
   Computing the length of the Line.  
   Computing the slope of the Line.

Create another class Triangle. Add a method to calculate the area of Triangle, provide suitable get and set methods.

* #include<iostream>

#include <cmath>

using namespace std;

class xy\_panel

{

int x1,x2,y1,y2;

public:

void set\_vertex()

{

x1=0;

y1=0;

x2=0;

y2=0;

}

void get\_vertex()

{

cout<<"\n enter the position of first vertex:"<<endl;

cin>>x1;

cin>>y1;

cout<<"enter the position of second vertex:"<<endl;

cin>>x2;

cin>>y2;

}

float distance()

{

// Calculating distance

return sqrt(pow(x2 - x1, 2) +

pow(y2 - y1, 2)\*1.0 );

}

};

class line

{

int x1,x2,y1,y2;

public:

void set\_vertex()

{

x1=0;

y1=0;

x2=0;

y2=0;

}

void get\_vertex()

{

cout<<"\nenter the position of first vertex of a line:"<<endl;

cin>>x1;

cin>>y1;

cout<<"enter the position of second vertex of a line:"<<endl;

cin>>x2;

cin>>y2;

}

float slope()

{

return (y2 - y1) / (x2 - x1);

}

};

class tringle

{

int a,b,c;

public:

void set\_axis()

{

a=0;

b=0;

c=0;

}

void get\_axis()

{

cout<<"\nenter the length of 1st axis"<<endl;

cin>>a;

cout<<"enter the length of 2nd axis"<<endl;

cin>>b;

cout<<"enter the length of 3rd axis"<<endl;

cin>>c;

}

float area()

{

float s=(a+b+c)/2;

float Area=sqrt(s\*(s-a)\*(s-b)\*(s-c));

return Area;

}

};

int main()

{

//distance between to point

xy\_panel x2;

cout<<"\*\*\*\*DISTANCE BETWEEN TWO VERTICES\*\*\*\*\*"<<endl;

x2.get\_vertex();//calling the get\_vertex method using x2 object

cout<<"\nthe distance between two vertex :"<<x2.distance();

//slope

line l2;

cout<<"\n\*\*\*\*\*COMPUTE THE SLOPE OF LINE\*\*\*\*"<<endl;

l2.get\_vertex();//calling the get\_vertex method using l2 object of line class

cout<<"\nthe sloape of a line :"<< l2.slope();

//area of tringle

tringle t2;

cout<<"\n\*\*\*AREA OF A TRINGLE\*\*\*\*"<<endl;

t2.get\_axis();

cout<<"\narea of tringle :"<<t2.area();

return 0;

}