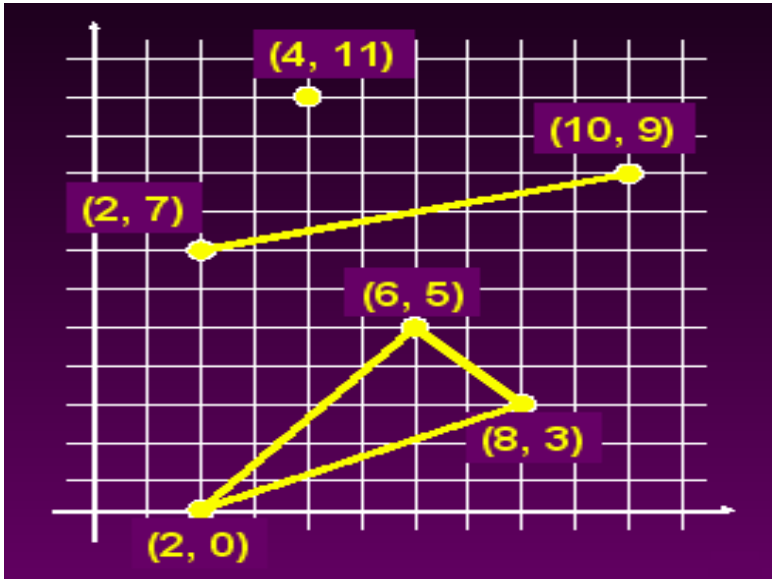
Lab 8

Task 28

Declare structures Point, Line and Triangle (refer to the lecture) and define the point, line and triangle in the following picture. Calculate the length of the line and the perimeter of the triangle



Note ***

- `#include <math.h>` should be added at the beginning of the program. Use `sqrt()` function to calculate square root, e.g., sqrt(4) will return a value 2.
- The coordinates of points should be declared as float or double type.

Task 29

Write a program to read students' information (name, score and major) and sort students' information by name in ascending order. Assume that t he total number of students is inputted from the keyboard but will not exc eed 50. If you use array to store the information, you need to check if the input number is beyond the array upper limit.

For example, the screen input/output could be like this (grey: input, white: output):

```
Please input the number of students (<=50): 4
Please input students' information:
Steven 90 CST
Wyn 50 FM
Tony 20 Stat
Ada 100 DS
The student list in ascending order by name is
 Ada 100 DS
Steven 90 CST
Tony 20 Stat
```

```
Please input the number of students (<=50): 51
Warning: Please input a number which does not exceed 50.
Input again: 4
Please input students' information:
Steven 90 CST
Wyn 50 FM
Tony 20 Stat
Ada 100 DS
The student list in ascending order by name is
 Ada 100 DS
Steven 90 CST
Tony 20 Stat
```

Add info about a program

At the top of each program, add the information (comments in GREEN). It is also required for EACH lab program in this semester.

```
// Programmer: ……
// Student ID: ……
// Date:….
// Task no: Week_#_Task_#
// Requirements: ……
#include<stdio.h>
int main()
{
   …….
}
```

Submission

- Compressed *.cpp into one file with file name in the format *Lab8_#######.zip* and submit it into iSpace.
- All .cpp files must be able to run under Visual 2010 C++ Express. The outputs will be checked against the outputs under Visual 2010 C++ Express