Practice Exercise #32: Triangle Incenter

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Reference: Week 9 Discussion Question 2

Date of release: 6 October 2014

Objective: Function with address parameters

Task statement:

In week 8 lecture exercise #4, you are to compute the centroid of a triangle. Besides the centroid, there are other "centers" of a triangle: circumcenter, orthocenter and incenter. You may refer to

http://jwilson.coe.uga.edu/emat6680/dunbar/assignment4/assignment4_kd.htm

Here, you are to write a program **triangleIncenter.c** to compute the incenter of a triangle given its three vertices. Google to search for the formula to compute the coordinates of the incenter. Your program should contain a function **incenter()**. You may use **float** type for all values. There should be no **printf()** statement in your **incenter()** function.

Two sample runs are shown below. The coordinates of the incenter are printed in 2 decimal places.

```
Coordinates of 1st vertex: -1 0
Coordinates of 2nd vertex: 3 0
Coordinates of 3rd vertex: 1 5
Coordinates of incenter = (1.00, 1.35)
```

```
Coordinates of 1st vertex: 63.2 21.8
Coordinates of 2nd vertex: -15 -6
Coordinates of 3rd vertex: -19.2 5.7
Coordinates of incenter = (-11.52, 1.34)
```

Sample runs:

```
Coordinates of 1st vertex: -1 0
Coordinates of 2nd vertex: 3 0
Coordinates of 3rd vertex: 1 5
Coordinates of incenter = (1.00, 1.35)

Coordinates of 1st vertex: 63.2 21.8
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