ICS4U – More OOP exercises

Question 1)

- Create a class called "Point" that
    - contains two variables of the type double.
- Create a class called "Line" that
    - contains two variables of the type Point (from above).
    - Has a method getLength( ) that calculates and returns the length of the Line object.
- Create a class called "Triangle" that
    - contains two variables: 1 Point and 1 Line (from above) (recall: one line and one point is enough to define a triangle)
    - Has a method getPerimeter( ) that calculates and returns the perimeter of the Triangle object.
    - Has a method getArea( ) that calculates and returns the area of the Triangle object (research "heron's formula")
    - Has a method isLarger(Triangle a) that returns a Boolean; true if the area of the Triangle (object) is larger than the area of the Triangle (parameter).
- Create a Main program that:
    - Creates 3 Triangle objects (create any other objects/variables required to accomplish this)
    - Prints the perimeters and areas of the 3 triangles
    - Compares 2 Triangle objects using the isLarger( ) method

Question 2)

- Create a class called "Triangle_2" that
    - is an extension of the "Triangle" class
    - has a method isPerpendicular( ) that returns a Boolean true if one of the angles is 90 degrees (use Pythagorean theorem to check for 90 degree angle)