Create a point class

* Each point consists of the X,Y coordinates
* Point p1 = new Point(3.4, 5.7);
* There will be two attributes: (xValue and yValue; each of type double)
* There will be three public methods: getX, getY and equals, which returns a Boolean when called with p1.equals(p2)

Create a triangle class

* Constructor accepts the name (String) and 3 points as vertices.
* Triangle myTri[0] = new Triangle(name,p1, p2, p3);
* The attributes of a triangle will be:
  + name (a string)
  + vert1, vert2, vert3 (each of type Point)
  + side1, side2, side3 (each of type double)
* There will be a private method:
  + sideLength(p1,p2) will return the distance between two points. This will be called from the constructor.
* There will be two public methods:
  + myTri[0].listVertices() will result in printing the vertices’ coordinates, nicely formatted.
  + myTri[0].listSides() will result in printing the triangle’s sides’ lengths, nicely formatted.

Methods:

* sideLength(p1,p2) will return the distance between two points. This will be called from the constructor.
* printName() will return the name of the triangle as a nicely formatted string.
* listVertices() will return the vertices’ coordinates as a nicely formatted string.
* listSides() will return the triangle’s sides’ lengths as a nicely formatted 3-line string.

***main***

* read in a line of data from **triInput.txt** (see ***GetPoints***)
* this data will be used to create three points
* throw an exception if the three points are collinear or there are duplicates
* the three points will be used to create a triangle
* the triangle will be placed in an arraylist of triangles (named myTri)
* each of the methods (above) will be applied to the triangle
* the triangle’s data will be printed
* this will be repeated for multiple triangles, until the end of the data file is reached

***sample output for each triangle***

The name of the triangle is Sally.

Vertices: (1.4, 2.3), (3.2, 4.1), (5.0, 6.9)

Side 1 is 5.84

Side 2 is 3.33

Side 3 is 2.55

***sample input file (Note: The data file will have one space to separate items.)***

Sally 1.4 2.3 3.2 4.1 5.0 6.9

Mickey -4 0 4 0 0 6.9282

Maggie -2.161 -3.366 2.161 3.366 -5.83 3.743

Bob 3.54 5.46 -4.54 5.557 3.1 -2.1

Alex 0 4 0 2 0 -2

Randi -4 3 1 3 6 3

Program 4: This program will be due on Wednesday, February 28, by 11:59 PM.

The input file will be named **triInput.txt** (Hard-code the name into your program.)

For the following, ***XX*** represents your initials, or initials and a digit.

The output should be displayed on the screen and written to the file called **XXmyTri.txt**

You will submit three files … **XXProg3.java, XXPoint.java** *and* XX**Triangle.java**