Description: In this lab, you will be practicing the use of the built in List libraries in java.util including ArrayList, List, and Collections. I provide you with a template which you will modify to find the distance between Philadelphia and a list of other cities. You will use another given class called TravelPlan to store the travel information. Store the distance between Philadelphia and other cities in an generic ArrayList of type TravelPlan. Sort the list of TravelPlan by the Collections.sort static method.

The following imports should be included in your java file.
import java.util.ArrayList;
import java.util.List;
import java.util.Collections;

First implement the City constructor. The constructor should simply set the fields (name, longitude and latitude), of the city class with the values of the constructor argument.

Next implement the constructor for the TravelPlan class. The origin, destination, and distance should be set in this constructor. To find the distance between two points, use the Euclidean distance formula. The **Euclidean distance** between two points \( P = (x, y) \) and \( Q = (a, b) \) in space is defined as \( d(P, Q) = \sqrt{(x - a)^2 + (y - b)^2} \). If you would like to use built in commands, you may use the Math library located in java.lang. (does not need to be imported). Relevant functions would be Math.pow and Math.sqrt.

Finally, override the toString method to print out the origin, destination, and distance, and the compareTo method to evaluate the objects of the class based upon distance.

Rubric:
(5 points) Compiles without errors.
(10 points) City class correctly implemented.
(20 points) TravelPlan class correctly implemented.
(5 points) driver program correctly implemented.

Deliverables: Submit on Blackboard.