OOP Test March 5, 2015 (Solutions in Blue) Your Name_____

Suppose you are given a plain text file, "countries.txt" that has names of countries(String), their areas(Double, square miles) and populations(integers). A java program reads in the file, sorts countries according to different criteria, and writes to files the sorted lists.

Your job is to use anonymous Comparator interface types to sort the countries according to Name, Area and Population. Only fill in the part where you do the sorting - you need not bother with the rest of the code. (Bold type below shows the only things you need to be concerned with)

```
import .....
public class Country {
        String Name;Double Area;  int Population;
/*** Other stuff **/
}

class Countries {
/* List to hold Countries */
   ArrayList<Country> CountriesList=new  ArrayList<Country>();

 /* Read file and populate Countries List */
   private void getCountries(File finput) throws Exception{
////////////////////////////////
   }

   public static void writeFile(File F, ArrayList<Country> AL) throws IOException{
  /*** Code to write to a file **/
}

   public static void main(String[] args) throws Exception{
        Countries cntries=new Countries();
/** Some needed stuff */
/** YOUR CODE -- Sort the countries list by name using a comparator **/
Collections.sort(cntries.CountriesList, new Comparator<Country>(){
                public int compare(Country c1, Country c2){
                   return c1.Name.compareTo(c2.Name);
                }
           });
        writeFile(f_name, cntries.CountriesList);

/** YOUR CODE -- Sort the countries list by Area using a Comparator **/ ***/
Collections.sort(cntries.CountriesList, new Comparator<Country>(){
                public int compare(Country c1, Country c2){
                   return (int)(c1.Area-c2.Area);
                }
           });
        writeFile(f_area,cntries.CountriesList);

/** YOUR CODE -- Sort the countries list by Population using a Comparator **/

Collections.sort(cntries.CountriesList, new Comparator<Country>(){
                public int compare(Country c1, Country c2){
                   return (c1.Population-c2.Population);
                }
           });
        writeFile(f_pop, cntries.CountriesList);
   }
}
```