AP/Honors Java
Unit 7 Practice Test

Name-

Period-

Free Response

1. Modify the following `Bug` class so that it realizes that `Comparable` interface and compares `Bug` objects by x location. Your code should be as efficient as possible.

```
public class Bug
{
   private int myX; // location of bug on the x-axis of its coordinate system
   private int myY; // location of bug on the y-axis of its coordinate system

   public Bug(int x, int y)
   {
      myX = x; myY = y;
   }

   public int getX()
   {
      return myX;
   }

   public int getY()
   {
      return myY;
   }

   // answer goes here









}
```

2. Rewrite the `compareTo` method so that it uses the distance from the (0, 0) origin to compare two `Bug` objects. If a `Bug` is farther from the origin, then it would be considered to be "greater" than another `Bug`. If one `Bug` is found at (5, 5) and another is at (-5, 5) then they would be considered to be equal. If one Bug is found at (4, 3) and the other at (3, 4) then they would also be considered to be equal.

3. Rewrite the `compareTo` method so that it uses the `myX` as the primary test to determine which `Bug` is greater. Only if both `Bug`'s have the same exact `myX` value then use `myY` as the "tiebreaker" to determine which `Bug` is greater. Only if two `Bug`'s have the same exact `myX` and `myY` values would they be considered to be equal.

4. Write a code segment that would be found in a client program that would make use of the `Bug compareTo` method in #1 above to compare the two objects `bug1` and bug2 and then display which one is "greater" than the other. You can assume that both objects have already been declared and instantiated and you can assume that they a different x locations (i.e. they are not "equal");