(1). (20 points) Suppose there is a special tax on cars in the city of Maple Glen as follows:

<table>
<thead>
<tr>
<th>Price of car</th>
<th>Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $25,000</td>
<td>10%</td>
</tr>
<tr>
<td>$25,000 - $75,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>&gt; $75,000</td>
<td>15%</td>
</tr>
</tbody>
</table>

Write a program that will read in from a keyboard a price for a car, and then output the price, the tax, and the total price for the car. Make sure that the user does not enter 0 or a negative number for the price of the car (i.e. Use a loop to ask user to re-enter the price of the car until the user’s input is not 0 or a negative number).

(2a). (15 points) Write a method that has 2 arrays of integers as parameters, and returns true if all of the elements in the first array match (in order) all of the elements of the second array.

(2b). (10 points) Write a driver to test the methods that you have defined and implemented in problems 2a

3). (30 points) For this problem, you will implement a complete class called Rectangle which represents a rectangle.

Instance Variables: The class has two instance variables.
- length: an int representing the length of the rectangle.
- width: an int representing the width of the rectangle.

Methods you must implement:
- Default Constructor: Define a constructor with NO parameter and initializes the instance variables to default values.
- Two parameter Constructor: Define a constructor that takes two parameters (length and width) and initializes the instance variables accordingly.
- Copy Constructor
- Accessor methods (get methods)
- Mutator methods (set methods)
- area: This method should return the area of the rectangle.
- merge: This method takes a Rectangle type parameter. The method will create a new Rectangle object whose length is the sum of length of the calling object and the length of the parameter. Similarly, the width of the new Rectangle object is the sum of width of the calling object and the width of the parameter. A reference to the new Rectangle object should be returned. The calling object and the parameter object should not be modified.
- toString: Write the toString method associated with this class. The returned String has to be in the following form: “length : [length value here], width: [width value here]”.
- totalArea: This is a static method that takes an array of Rectangles as a parameter. The method returns the sum of the areas of the rectangles in the array.

4). (25 points) Write a driver to test the methods defined in the above Rectangle class. Please give A sample output for your driver.