California State Polytechnic University, Pomona **Name_____**
Computer Science Department
CS141: Introduction to Programming and Problem-Solving
Spring 2016
Instructor: Prof. Tony Diaz

Program 2 - Due April 20

(Total: 100 pts)

Write a program titled "YourLastName_Geometry" which has the following methods:

- A static method that accepts the radius of a circle and returns the area of the circle.
  Use the following formula: Area = πr^2
  Use Math.PI for π and the radius of the circle for r.

- A static method that accepts the length and width of a rectangle and returns the area of the rectangle. Use the following formula: Area = Length x Width

- A static method that accepts the length of a triangle's base and the triangle's height. The method should return the area of the triangle. Use the following formula:
  Area = Base x Height x 0.5

The methods should display an error message if negative values are used for the circle's radius, the rectangle's length or width, or the triangle's base or height.

Next, write a driver program titled "YourLastName_Driver" to test the geometry class. The following shows an example interaction of the driver and geometry classes captured in a file by the command "% script Driver.out" (bolded areas represent the user's input):

Script started on Thu Sep 26 10:23:58 2013
% java Diaz_Driver

Geometry Calculator
1. Calculate the Area of a Circle
2. Calculate the Area of a Rectangle
3. Calculate the Area of a Triangle
4. Quit

Enter your choice (1-4): **1**

Enter the radius of the circle: **9**

The area of the circle is: 254.47

Geometry Calculator
1. Calculate the Area of a Circle
2. Calculate the Area of a Rectangle
3. Calculate the Area of a Triangle
4. Quit

Enter your choice (1-4): **4**

% exit
script done on Thu Sep 26 10:24:17 2013

Display an error message if the user enters a number outside the range of 1 through 4 when selecting an item from the menu.

Run the program with different inputs and capture all interaction in a file using the script command.

What to turn in:
- Soft copy of the results using the script command
- Soft copy of the programs (using Blackboard)