# **Lab Assignment 2\_2**

**Important: Make sure you include the 3 header lines described below in all your programs; otherwise you will lose points.**

**// Program Name:** program name here **// Name:** your name here **// Purpose:** A sentence that describes what this program is doing.

1. Write a Java project called **Lab2\_2A** that asks the user for the 3 side lengths of a triangle. (Make all variables doubles.)

Use the following formulas: s = (sideA + sideB + sideC) / 2

area = Square root of (s \* (s- sideA) \* (s- sideB) \* (s- sideC))

Hint: **Math.sqrt(x)** gives you the square root of **x**

Print the area with a label.

1. Write a Java project called **Lab2\_2B** that asks the user for coordinates for 2 points on a graph. You’ll be asking for **x1** & **y1** for the first point and **x2** & **y2** for the second point. (Make your variables doubles again.)

Remember to put **import java.util.Scanner;** before your main method (right after your 3 header comments).

Calculate the distance between the 2 points using the formula:

Distance = Square root of ( (x2 – x1)2 + (y2 - y1) 2 )

Hint: **Math.pow(x,2)** gives you **x** to the power of 2

Print the distance with a label.

1. Write a Java project called **Lab2\_2C** that calculates the cost of a driving trip.

It should use JOptionPane input dialog boxes to ask the user for 3 double variables representing:

* 1. Driving distance
  2. Miles per gallon
  3. Price of gas per gallon

Remember to put **import javax.swing.JOptionPane;** before your main method (right after your 3 header comments).

* Using those 3 values, calculate how much money was spent on gas for the trip.
* Use the JOptionPane message dialog box to show the cost and make sure it shows a label for the output value.
* Print the cost with a $ and 2 decimal places.

(Sample run: If distance = 120 miles, miles per gallon = 31, & price per gallon = $2.65, then the cost would be $10.26. I’ll use different number to test it though.)

1. **Lab2\_2D:** A Cheerios cereal box can hold 8.9 ounces of Cheerios. The cost of producing each box of cereal is $0.50, and each box is sold for $3.00. Write a Java program to do the following:
   1. Ask the user to enter how many ounces of cereal is made by the manufacturer in a day.
   2. Calculate how many boxes of cereal this would be (round down to the nearest integer)
   3. Calculate the cost of making this number of boxes and the profit from selling all the boxes.
   4. Print the 3 calculated values with labels. Make sure the 2 monetary values are printed in currency format (with a $ and 2 decimal places).

(Sample run: If 1000 ounces were made, then this would be 112 boxes. The cost to make the boxes would be $56.00, and the profit would be $280.00.)