Assessment Instructions

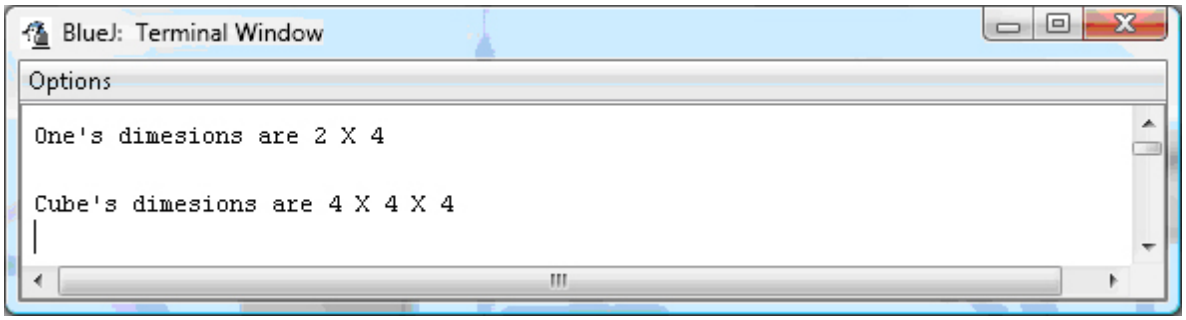
Instructions: For this assessment, you are going to extend the Box class to create a class called `cube`. You are also going to create a **`Triangle`** class and then extend it by creating **`Equilateral`** and **`IsoscelesRight`** classes.

1. Create a folder called **Assessment** in your Unit3 Assessments folder.
   Copy the Rectangle.java and Box.java demo classes to your folder.

2. Create a class called **`Cube.`**
   a. A **`Cube`** is a **`Bo`**x where the **`length`**, **`width`**, and **`height`** all have the same values.
   b. You won't have to add any additional instance variables or methods, but you will have to set up the Cube's constructor to ensure that length, width, and height all have the same values.

3. Save the class as **Cube.java**.

4. Create a test program called **TestCube.java** to test your class.
   a. Output should look like this:



5. Now, you are going to create a **`Triangle`** class (save in file called **Triangle.java**).
   a. Triangle will need instance variables **`sideA`**, **`sideB`**, and **`sideC`**. They should be of type double. You will also need methods **`getSideA()`**, **`getSideB()`**, and **`getSideC().`**
   b. Create an appropriate constructor for Triangle.

6. Create class **`Equilateral`** that extends Triangle (save in file called **Equilateral.java**).
   a. Equilateral takes just one double value and uses that to make sure all sides of the triangle are set to the same value. Make sure the constructor calls **`super()`** appropriately.
   b. No other methods are needed.

7. Create class **`IsoscelesRight`** that extends Triangle (save in file called **IsoscelesRight.java**).
    a. IsoscelesRight takes just one double value, but sets up the sides so that an isosceles right triangle is formed. **Hint:** Do this by setting sides a and b to same value, and side c will equal side a times the square root of two. Make sure the constructor appropriately calls **`super()`**.
    b. No other methods are needed.

8. Create a test class called **`TestTriangles`** (save in file called **TestTriangles.java**).
    a) Make your **`main()`** method test your new classes and create output similar to the following: