**BlueJ & Shapes Lab 1**

1. Click on the Circle box, right-click it and choose new `Circle()` and then click Ok. You have just created (*instantiated*) your first object! The circle_1 object is placed on the object bench.

   - Right-click the circle object (on the bench) and choose *Inspect* to invoke the Object Inspector. The fields listed under Object Fields are the objects *attributes*. Attributes define an object and are generally described by *nouns*. The set of all values of all attributes define an objects *state*.
   - When you right-click the circle object, all the objects *methods (behaviors)* are listed above *Inspect*. Methods allow you to move and modify the object. Methods are generally described by *verbs*.
   - What is the value of `isVisible`? _____
   - Right-click the circle object and choose `makeVisible()`.
   - What is the circle’s (x, y) position? ______
   - Right-click the circle object and choose `moveDown()`.
   - What is the circle’s (x, y) position? ______ What do you expect it will be if you *invoke* the `moveDown()` method again? ______ Were you correct?
   - Invoke the circle’s `moveRight()` method. What is the circle’s (x, y) position? ______

2. Create a new circle object (for instructions see #1).

   - Right-click the circle object and choose *Inspect* to invoke the Object Inspector.
   - Why can’t you see it?
   - Change its color.
   - What happens when you invoke the `changeColor` method, and write the color into the parameter field *without* the quotes?

   - What happens when you specify a color that is not known?

   - Change its size to 10.
   - Invoke the `moveVertical()` method and enter: 10. What happened to its `yPosition`?
   - How could you get the circle to move up?
   - Move the circle so it is at the upper left hand corner of the canvas.
   - What do you think the coordinates of the upper left hand corner are? (____, ____)

3. Create a new square object. Invoke its Object Inspector, make it visible and change its color to blue.

   - Move it to the lower right corner of the canvas.
   - What do you think the coordinates of the lower right hand corner are? (____, ____)
   - Position the square to the center of the canvas
   - Enlarge it so that only a small sliver (5 *pixels*) of the canvas is showing on all its sides.
   - Call me over to initial this page _____
4. Instantiate a new triangle object. Open the Object Inspector for each shape.
   • List the all the object fields that all 3 objects have in common

   • List the object fields that is unique to each object

   • What method does a triangle object have that is slightly different than the other 2 objects?

For #5 -7, write down the method calls it takes you to achieve the objective. We will use them later and you will be asked to hand them in.

5. Position the triangle so that its base is the entire bottom of the canvas and its top is on the top of the canvas.

6. Position a 10x10 square at the origin and move it along the top of the canvas so it moves to the upper right corner and then travels to the lower right corner.

7. Use the methods from the Shapes project to create a picture of a house and a sun similar to that shown below.