

Chapter 4 HW -- Robbie Selwyn

True/False

1. Using *graphics.py* allows graphics to be drawn into a Python shell virtual window.
 - a. False. Graphics.py allows graphics to be drawn in a new and separate graphical window.
2. Traditionally, the upper left corner of a graphics window has coordinates (0,0).
 - a. True. Graphics windows do have an upper left hand coordinate of (0,0) unlike the cartesian system.
3. A single point on a graphics screen is a pixel.
 - a. True. Pixels are points on a graphics screen that make up a screen.
4. A function that created a new instance of a class is called an accessor.
 - a. False. A function that creates a new instance of a class is called a constructor.
5. Instance variables are used to store data inside an object.
 - a. True.
6. The statement *myShape.move(10,20)* moves *myShape* to (10,20).
 - a. False. It moves *myShape* down 20 and to the right 10.
7. Aliasing occurs when two variables reference the same object.
 - a. True. If two variables reference the same object, aliasing occurs.
8. The copy method is provided to make a copy of a graphics object.
 - a. False. The *clone()* method is provided to make a copy of an object.
9. A graphics window always has the title "Graphics Window."
 - a. False. In the constructor for *GraphWin()* the title can be specified as argument number one.
10. The method provided by the graphics library for getting the mouse click is *readMouse*.
 - a. False. The method provided for getting the mouse is *getMouse()*.

Multiple Choice

1. A method that returns the value of an object's variable is called a(n)
 - d. Accessor. Like it sounds, an accessor accesses a variable.
2. A method that changes the state of an object is called a
 - b. mutator. A mutator mutates the state of an object.
3. What graphics.py class would be best for creating a square?
 - d. *Rectangle()* would be the best class to use as it can be specified to create a square very easily. In *graphics.py*, there is not *Square()* class.
4. What command would set the coordinates of win to go from (0,0) in the lower-left corner to (10,10) in the upper-right?
 - c. *win.setCoords(0,0,10,10)* would set the coordinates that way.
5. What expression would create a line between (2,3) and (4,5)?
 - d. *Line(Point(2,3), Point(4,5))* would create the line. The object line takes in parameters of the object *Point*.
6. What command would be used to draw the object shape into the graphics window *win*?
 - d. *shape.draw(win)* would draw shape into win.
7. Which of the following computes the horizontal distance between p1 and p2?

- d.** `abs(p1.getX() - p2.getX())` would compute the horizontal distance.
- 8. What kind of objects can be used for textual input?
 - b.** *Entry* objects can be used for graphical user input.
- 9. A user interface organized around human interaction and visual elements is called a
 - a.** GUI. GUIs contain visual elements that allow human interaction
- 10. What color is `color_rgb(0,255,255)`?
 - b.** Cyan matches that color.