Clearly PRINT your full name:_____

1. Write a few sentences that describe what a class is, what an object is, and the relationship between classes and objects in python programming. Write clearly and legibly for full credit.

2. Examine the definition of the point class (to the left) and the code that uses it (to the right).

```
class Point:                                    p1 = Point()
    def __init__(self,x=0,y=0):                 p2 = Point(3,4)
        self.x = x                              p3 = Point(3,3)
        self.y = y
                                                v1 = p1.x
    def distance(self):                         v2 = p2.y
        from math import sqrt                    v3 = p2 + p3
        dist = sqrt( self.x*self.x +            v4=p2.distance()
                     self.y*self.y    )
        return(dist)

    def __add__(self,other):
        newx = self.x+other.x
        newy = self.y+other.y
        return Point(newx,newy)
```

In the box below, write down the value of the four variables (v1,v2,v3, v4) after the code executes.

v1 =   v2=   v3=   v4=

3. Using the tkinter module in python, write code that produces a GUI window that has one text entry and one button. The button should display "Click Me!" and when the user clicks the button the message "You Clicked!" should appear in the text entry. Encapsulate your gui program in a python class and instantiate the class to create the GUI (very similar to how you wrote your HW5). Your __init__ method should create all of the gui widgets, and you should define a "clicked" method that will be activated when the user clicks the button.