

Exercise 4 – Methods/Functions

1. Type in the following program and determine what it does.

```
def print_twice(param):  
    print (param, param)  
  
# main  
word=input("Please enter a word: ")  
print_twice(word)
```

2. Create a method named clearScreen(_) that prints out twenty-five blank lines. Save your program as blankLines.py.

```
def clearScreen():  
  
#main  
print "Hello World"  
clearScreen()
```

3. Complete the method below so that it will print out the parameter for the number of times indicated. Save your program as paraNumTimes.py.

```
def repeat( param, numTimes ):  
#you write code here  
  
#main  
word = input("Please enter a word: ")  
times = int(input("Please enter a number: "))  
repeat(word, times)
```

4. Change the order of your main and method, put the main first and method second now. Run the program and record what error message you get. Can you state a rule about *method definitions* and *method calls* which describes where they can appear in relationship to each other in a program?
5. Write a method that prints any name in a box. The name should be passed as a string parameter to the method. The box should adjust in size based on the length of the name. Write a main that calls your method to test it. Save your program as nameInABox.py.

```
+-----+  
|Aaron|  
+-----+  
def printNameBox(someString):  
#you fill in some code here  
  
#main  
name = input("Please enter your name")  
#you fill in some more code here
```

6. Write a method that calculates and prints out the area of a circle and the volume of a sphere given the radius. Your main should prompt the user for the radius. Be sure to print the information out in a nicely formatted way. For example/

The radius is: 54.7 cm

The area of the circle is: 9399.9 cm squared

The volume of the sphere is: 685568.1 cm cubed

Save your program as areaVolume.py.

7. Write a method that calculates tax on an item. The method should have the price of the item passed as a parameter. The method should print out the amount before tax, amount of tax and the final amount charged. Save your program as itemCost.py.

Before Tax: \$25.99

Amount Tax: \$ 3.38

Total Amount: \$29.37

8. Write two methods. One that converts a temperature from Celsius to Fahrenheit $C = (5 / 9)(F - 32)$ and that does the reverse $F = (C * 9 / 5) + 32$. Your methods should accept the temperature as a floating point number and print out the converted temperature rounded to the nearest whole number. Save your programs as fahrenheitToCelsius.py and celsiusToFahrenheit.py.

Temp in Celsius: 14

Temp in Fahrenheit: 57.2