**b.5 Answers**

**Level 0: Establishing the Python Turtle Environment**

1. Create an new Repl by selecting the “Python with Turtle” language / environment.
2. Begin all of your turtle programs with the following code to create a “pen”:

import turtle

myPen = turtle.Turtle()

1. Create a program to draw a red circle. Provide a listing of your program code below:

**Level 0 Code**

import turtle

myPen = turtle.Turtle()

myPen.color("red")

myPen.circle(60)

**Level 1: Drawing Basic Shapes**

1. Open the document PythonWorksheetII from the class GItHub repository.

I did this

1. Create a program to draw any three of the shapes described in “Part III” of the PythonWorksheetII document. Provide a listing of your program code below:

**Level 1 Code**

import turtle

myPen = turtle.Turtle()

myPen = turtle.Turtle()

myPen.color("blue")

myPen.circle(60)

myPen.color("red")

myPen.forward(60)

myPen.left(90)

myPen.forward(120)

myPen.left(90)

myPen.forward(120)

myPen.left(90)

myPen.forward(120)

myPen.left(90)

myPen.forward(60**Level 2: Turtle Challenge 3&4 – Filled Shapes**

1. Review the sample code for creating filled shapes at:   
   <http://www.pythoncode.co.uk/turtle-challenge-3>.

I have reviewed this

1. Complete the challenge described at: <http://www.pythoncode.co.uk/turtle-challenge-4>  
   Provide a listing of your program code below:

**Level 2 Code**

import turtle

myPen = turtle.Turtle()

myPen.begin\_fill()

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

myPen.end\_fill()

myPen.forward(50)

myPen.left(90)

myPen.forward(100)

myPen.left(90)

myPen.forward(100)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(100)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

myPen.left(90)

myPen.forward(50)

**Level 3: Turtle Challenge 5&6 – Spirals**

1. Review the sample code for creating filled shapes at:   
   <http://www.pythoncode.co.uk/turtle-challenge-5>

I have reviewed this

1. Complete the challenge described at: <http://www.pythoncode.co.uk/turtle-challenge-6>

Provide a listing of your program code below:

**Level 3 Code**

**Square Spiral Code**

import turtle

myPen = turtle.Turtle()

the distance = 180

myPen.forward(180)

for i in range(29):

myPen.right(90)

distance = distance - 5

myPen.forward(distance)

**Hex Spiral Code**

import turtle

myPen = turtle.Turtle()

the distance = 230

myPen.forward(230)

for i in range(49):

myPen.right(60)

distance = distance - 5

myPen.forward(distance)

**Torus Code**

import turtle

myPen = turtle.Turtle()

for i in range(37):

myPen.circle(60)

myPen.right(70)

myPen.circle(30,60)

**Level 4: Four Quadrant Cross Challenge**

1. Complete the challenge described at: <http://www.101computing.net/python-turtle-challenge/>

Provide a listing of your program code below:

**Level 4 Code**

import turtle

myPen = turtle.Turtle()

myPen.shape("arrow")

myPen.color("red")

myPen.delay(5)

for i in range(0,11):

yFrom=10-i

xTo=i

myPen.penup()

myPen.goto(0,20\*yFrom)

myPen.pendown()

myPen.goto(20\*xTo,0)

for i in range(0,11):

yFrom=10-i

xTo=i

myPen.penup()

myPen.goto(0,-20\*yFrom)

myPen.pendown()

myPen.goto(20\*xTo,0)

for i in range(0,11):

yFrom=10-i

xTo=i

myPen.penup()

myPen.goto(0,20\*yFrom)

myPen.pendown()

myPen.goto(-20\*xTo,0)

for i in range(0,11):

yFrom=10-i

xTo=i

myPen.penup()

myPen.goto(0,-20\*yFrom)

myPen.pendown() myPen.goto(-20\*xTo,0)