This practice midterm gives you a guide to the subject matter and format the first midterm of the semester.

**Assignment:** Do the practice midterm and submit it via Moodle.

**Due:** Friday, February 8, 2013

For questions 1-10, your answer to each question should be in three parts:

i. The answer you get to the question without consulting the Python interpreter
ii. The answer you get to the question after consulting the Python interpreter
iii. A short (one or two sentence) explanation of any difference between i an ii.

During the midterm you will not have access to the Python interpreter or your notes. You will be given a copy of a summary of elements of the Python language that you will find it useful to consult.

*While doing this practice midterm, you should: i) attend one or more office hour sessions with an instructor or classroom assistant and ii) pose questions about anything you don’t understand on Moodle.*

Questions 1-10 are multiple choice (4 points each).

**Question 1. Which of the following is (are) true?**

1. type(['word', 5]) == `<class 'list'>`
2. type(['word', 5, ['word', 5]]) == `<class 'list'>`
3. type([]) == `<class 'list'>`

a. 1 only
b. 1 and 2 only
c. 1 and 3 only
d. 1, 2 and 3
e. none of the above

**Question 2. What is the output of the following code?**

```python
from turtle import *
def line100(lineColor, width, painty):
    painty.color(lineColor)
    painty.width(width)
    painty.forward(100)
    exitonclick()

t = Turtle()
line100('blue', 5, t)
```

a. a blue line of width 5 and length 100
b. Type error: string literal is not a valid parameter
c. Import error: '*' is not an attribute of class Turtle
d. NameError: global name 'Turtle' is not defined
e. none of the above
**Question 3.** What is the output of the following code?

```python
weather = 'rain'
if weather == 'rain':
    print('umbrella time')
elif weather == 'cold':
    print('wear jacket')
else:
    print('not cold')
```

a. umbrella time  
b. umbrella time  
c. the empty string  
d. Syntax error: 'elif'  
e. none of the above

**Question 4.** What is the output of the following code?

```python
thing = 1
index = 0
while index < 2:
    thing += thing
    index += 1
print(thing)
```

a. 1  
b. 1111  
c. 4  
d. Type error: unsupported operand type(s)  
e. none of the above

**Question 5.** What is the output of the following code?

```python
bool0 = True
bool1 = False
print(bool0 and bool1)  
print(bool0 or bool1)
```

a. True  
b. True  
c. False  
d. bool1bool2  
e. none of the above
Question 6. What is the output of the following code?

def addThree(a, b, c):
    return a + b + c

addThreeOutput = addThree(1, 2, 3)
print(addThreeOutput)

a. 123
b. 6
c. Parameter error: mismatched parameters
d. Print error: unable to print int
e. none of the above

Question 7. What is the output of the following code?

def paramTest(a, b):
    c = a + ' ' + b
    return c

p0 = 'Durn'
p1 = 'tootin'
c = paramTest(p0, p1)
print(c)

a. ab
b. a b
c. Durntootin
d. Durn tootin
e. none of the above

Question 8. What is the output of the following code?

echoOutput = echo("hello")
print(findSaying)

def echo(text):
    return text
text = text + text

a. NameError: name 'echo' is not defined
b. hello
c. hello
d. hello
   hellohello
e. none of the above
Question 9. What is the output of the following code?

```python
num = 0
add = 2
while num < 5:
    num = num + add
print(num)
```

a. 0  
b. 2  
c. 4  
d. 6  
e. none of the above

Question 10. What is the output of the following code?

```python
def paramTest(aStr, anInt):
    print(aStr, 'is a str')
    print(anInt, 'is an int')

paramTest(1, 'one')
```

a. 1 is an int
   one is a string  
b. one is an int
   1 is a string  
c. TypeError: incompatible types  
d. ParameterError: integer type expected  
e. none of the above
Questions 11-13 are programming problems, worth 20 points each. Be sure to use proper indentation of your code.

Question 11.

Write a function named steps() that draws a staircase. Each step of the staircase consists of a vertical line and a horizontal line of the same length. The function steps() takes three parameters:

1. a turtle
2. an integer, stepSize, that is the height and depth of a step
3. an integer, numSteps, that is the number of steps to draw

For example, if the function steps() is called by the following code, the drawing below would be correct output:

```python
from turtle import *
turt = Turtle()
steps(turt, 50, 3)
```

Question 12.

Write a function named inRange() that tests whether a given number falls within a specified range. The function inRange() takes three parameters:

1. testNum
2. floor
3. ceiling

The function inRange() should return True if testNum is greater than or equal to floor and less than or equal to ceiling. For example, the following would be correct output:

```python
>>> isInRange = inRange(4, 1, 7)
>>> print(isInRange)
True
```

Question 13.

Write a function named greet(). The function greet() should ask the user's name, and then greet the user by name, with a comma between the greeting and the name. The function greet() takes one parameter: a string named greeting.

For example, the following would be correct input and output:

```python
>>> greet('Cheerio')
What's your name? Gabriel
Cheerio, Gabriel
```