

COSC235 Fall 2007  
Test #2

Please read each question carefully and be sure to give complete answers. Work quickly and good luck!

1. (2 pt.) Print your name: \_\_\_\_\_

2. (6 pts.) Given that  $x$  is 5 and  $y$  is 7, what is the value of  $x$  after each statement is executed? Assume each part is independent of the preceding parts.

a)  $x /= y$

b)  $x *= x + 2$

c)  $x \% = x - 4$

3. (6 pts.) Write the equivalent *while*-loop for the following *for*-loop:

```
sum = 0
for i in range(1, 100, 3):
    sum += i
```

4. (8 pts.) Write a *while*-loop that will

a) find the sum of the first 100 even numbers, i.e.,  $2 + 4 + 6 + \dots$  for 100 different numbers.

b) count how many time a positive integer can be divided by two before it is zero.

5. (6 pts.) In the following truth table, each column is either the logical *NOT* of a previous column, or the logical *AND* or *OR* of two previous columns. Correctly label the last three columns.

$p$	$q$	$r$			
T	T	T	F	T	F
T	T	F	F	T	F
T	F	T	F	T	F
T	F	F	F	F	F
F	T	T	T	T	T
F	T	F	T	T	T
F	F	T	T	T	T
F	F	F	T	F	F

6. (8 pts.) Rewrite the following post-test loop as a standard Python while loop, i.e., a *while*-loop without `True` or `break`:

```

while True:
    weight = input("Enter a positive number: ")
    if weight > 0:
        break
    else:
        print "Please follow directions! "

```

7. (6 pts.) For each of the following, give the result or explain why the action is illegal:

a) `a, b = 1, 2, 3`

c) `(a, b) = 3`

8. (4 pts.) If you want to add information to the end of a file `data.txt`, what command would you use to open the file?

9. (12 pts.) Assume that the file `data.txt` contains the following four lines:

```
How
Now
Brown
Cow?
```

After opening the file and associating it with the variable `infile`, the file was read with a single command. If the variable `data` contains the following after a read, give the command that was used. Assume that each part begins with a newly opened file, i.e., is independent of the preceding parts.

a) `'How\nNow\nBrown\nCow?\n'`

b) `['How\n', 'Now\n', 'Brown\n', 'Cow?\n']`

c) `'How\n'`

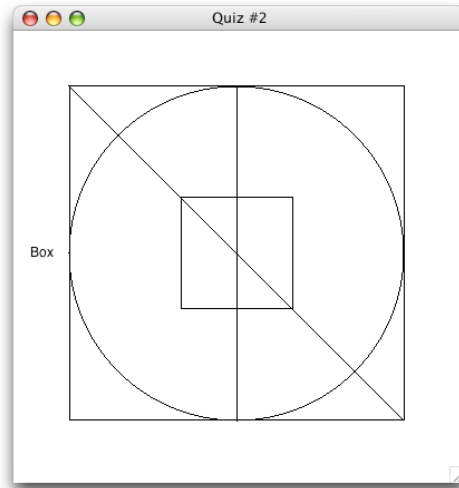
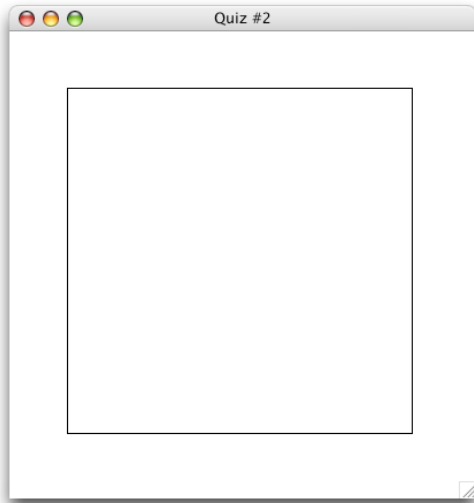
10. (6 pts.) Using this code, what will be returned if the user enters the values that follow?

```
def mydivide():
    b, a = input("Enter divisor and dividend: ")
    try:
        c = a/b
        return c
    except ZeroDivisionError:
        return 10
    except TypeError:
        return 20
```

a) 0, 5

b) 10, 5

c) "sam ", "sally "



11. (16 pts.) With the graphics package loaded, the figure on the left was created by the following lines of code:

```
win = GraphWin("Quiz #2", 400, 400)
Rectangle(Point(50, 50), Point(350, 350)).draw(win)
```

In the next few steps, you will write code so that the figure on the right is produced.

- What code would you write to add the diagonal line from the upper left corner to the lower right?
- What code would you write to add the small square (with an edge of 50 pixels) at the center?
- What code would you write to add the circle?
- What code would you add to display "Box" to the left of the figure?

12. (6 pts) Write a Boolean function `triple()` that takes a single number as an argument returns `True` if the number is divisible by three. E.g., `triple(19)` would return `False`.
13. (6 pts.) Write a function `bmiCk()` that takes a numeric argument and displays one of three messages. If the argument is less than 25, display "Fit and trim". If the argument is 25 or more but is less than 30, display "A little over weight". If the argument is 30 or more, display "Seriously overweight". For example, `bmiCk(29.0)` would display "A little over weight".
14. (8 pts.) Write a function `fileLength()` that takes a file name as an argument and returns the number of lines in that file. E.g., `fileLength("data.txt")` would return 4 for the file in Problem #9.

Pledged: \_\_\_\_\_