

COSC235 Spring 2007  
Test #2

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

1. (1 pt.) Print your name: \_\_\_\_\_
2. (9 pts.) Given that  $x10$  is 10 and  $y3$  is 3, what is the value of  $x10$  after each statement is executed? Assume each part is independent of the preceding parts.
  - a)  $x10 \%= y3$
  - b)  $x10 += 2 + x10 / y3$
  - c)  $x10 -= x10 * 3 - 4$
3. (6 pts.) Write an *update operator* that will
  - a) add  $y$  to  $x$ . E.g., if  $x$  is 2 and  $y$  is 3,  $x$  becomes 5.
  - b) triple the value of  $x$  and add five to it. E.g., if  $x$  is 10, then  $x$  becomes 35.
4. (9 pts.) For each of the following, give the result or explain why the action is illegal:
  - a)  $a = 1, 2, 3$
  - b)  $b = (1, 2, 3)$   
 $b[3] = 4$
  - c)  $(a, b) = 5$
5. (4 pts.) What command do you execute to load the graphics library in Python?

6. (16 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`, what will be in the variable `data` after each of the following has completely executed? Assume that each part begins with a newly opened file, i.e., is independent of the preceding parts.

a) `data = infile.read()`

b) `data = infile.readlines()`

c) `data = infile.readline()`

d) `for line in infile:  
 data = line`

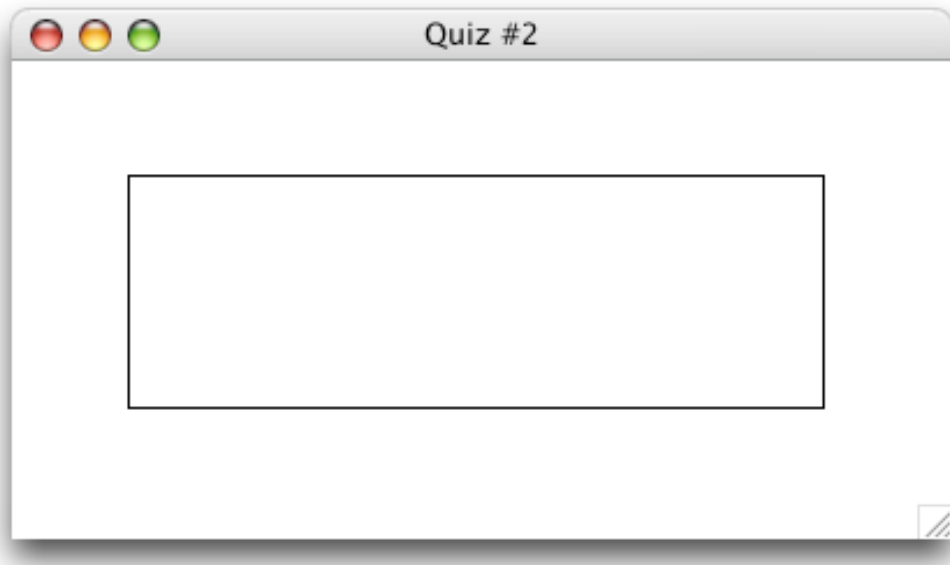
7. (12 pts.) Tell whether each of the following will succeed or fail if `x` is 2, `y` is 3, `gender` is "female", and `test` is `False`.

a) `y <= x or test`

b) `x < y and x + 2 > y`

c) `test or not test`

d) `gender != "male" and not test and x != y or test`



8. (20 pts.) With the graphics package loaded, the window above was created by the following lines of code:

```
win = GraphWin("Quiz #2", 400, 200)
Rectangle(Point(50, 50), Point(350, 150)).draw(win)
```

- a) What will be displayed (sketch on the figure) after executing the following:

```
Line(Point(100, 75), Point(200, 75)).draw(win)
Line(Point(200, 75), Point(100, 125)).draw(win)
Line(Point(100, 125), Point(200, 125)).draw(win)
```

- b) What will be displayed after executing the following:

```
Circle(Point(200, 100), 50).draw(win)
```

- c) What command would you enter to draw a horizontal line from one side of the box to the other that passes through the center of the box?

- d) What command would you enter print "My Logo" centered above the box?

- e) After executing the line below, what command would you enter to draw a vertical line from the top of the box to the bottom of the box passing through the center of the box?

```
win.setCoords(0.0, 0.0, 4.0, 2.0)
```

9. (7 pts.) Write a Boolean function `prezCk()` that takes three parameters, a string giving nationality, an integer giving age, and a Boolean variable that is `True` if the individual is a naturalized citizen and `False` otherwise. The function should return `True` or `False` depending of whether the person is eligible to run for president. For example, `prezCk("United States", 35, False)` would return `True`.
10. (8 pts.) Write a function `class()` that takes a nonnegative integer argument `hours` and returns "freshman" if `hours` is between 0 and 29, "sophomore" if `hours` is between 30 and 59, "junior" if `hours` is between 60 and 89, and "senior" if `hours` is 90 or more. E.g., `class(45)` returns "sophomore".
11. (8 pts) Write a function `head()` that takes a *file name* and a *count* as arguments and displays the first *count* lines in the specified file. For example, the call `head("data.txt", 2)` would display the first two line in the file `data.txt`.

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