COSC235: Spring 2008
Quiz #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. (6 pts.) Given that *x* is 7 and *y* is 3, 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 *= 5 + 3 * x`

3. (9 pts.) Given that *x* is 5, *y* is 4, and *z* is 3, what is the value for each of these expressions?

a) `x >= y and y == z + 1 and x != z`

b) `x >= y and y == z + 1 or x == z`

c) `not x <= y and x == z + 1 or x == z`

4. (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	T	F	F
T	T	F	T	T	T
T	F	T	T	F	F
T	F	F	T	T	T
F	T	T	T	F	F
F	T	F	T	T	T
F	F	T	F	F	F
F	F	F	F	T	F

5. Consider the following *while*-loop.

```
ans = 0
i = 0
while True:
   i = i + 2
   ans += i
   if i > 10: break
```

a) (4 pts.) What is the value `ans` after the loop completes?

b) (6 pts.) Give an equivalent *for*-loop for this *while*-loop.

6. (6 pts.) Write a *while*-loop that will count how many time a positive integer x can be multiplied by two before it is greater than 1000.

7. (6 pts.) Give the result for each of the following or explain why it is illegal.

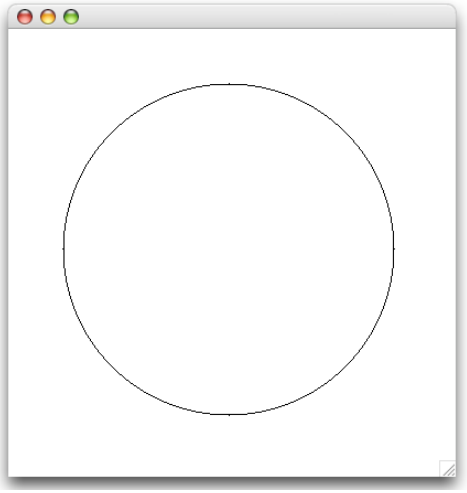
a) a, b, c = 1, 2, 3

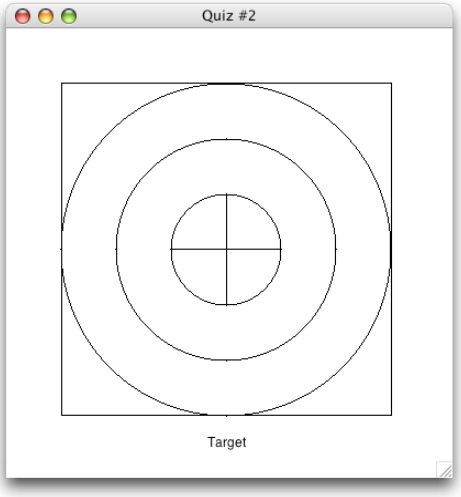
b) a, b = 1

c) a, b = (1, (2, 3))

8. (8 pts) Give code to find the smallest of four numbers: *x*, *y*, *z*, and *w*. You should not use the built-in function `min()` but may use any of the other relevant techniques discussed in the text.

a) (10 pts.) A professor awards grades using the usual 100-point scale: 90 or better is an A; 80 or better is a B; 70 or better is a C; 60 or better is a D; everything else is an F. Write a function `letterGrade()` that takes numeric grade and returns the appropriate letter grade. It should display a message for unreasonable grades. For example, `letterGrade(95)` would return an "A" but `letterGrade(105)` would print an error message, perhaps "`Invalid Grade`".





9. (16 pts.) With the graphics package loaded, the figure on the left was created by the following lines of code:

```
win = GraphWin("",400,400)
Circle(Point(200,200), 150).draw(win)
```

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

a) What would you change to add the title "Quiz #2" to the top of the screen and what would you add to display "`Target`" at the bottom of the figure??

b) What code would you add to create the large rectangle?

c) What code would you add to create the two additional circles?

d) What code would you add to create the cross-hair at the center of the picture

10. (6 pts) Write a function `odd()` that takes an integer and returns `True` if the number is odd and `False` if the number is even. For example, `odd(3)` would return `True`.

11. (6 pts.) For the preceding problem, explain how you could fix the code so that it will respond with an error message if called with inappropriate parameters. For example, `odd("sam")` might print the message "`Inappropriate type`". Give sample code in your answer.

12. (10 pts.) Write a function `appendFile()` that takes the names of two files and appends the contents of the first onto the second file. That is, anything in the first file is added to the end of the second file.

Pledged: _____