CS 115 Exam 1, Fall 2011

Your name: _____

Rules

- You may use one handwritten 8.5 x 11" cheat sheet (front and back). This is the only resource you may consult during this exam.

- Explain/show work if you want to receive partial credit for wrong answers.

- As long as your code is correct, you will get full credit. No points for style.

- When you write code, be sure that you clearly indicate the indentation level of each statement.

Grade (instructor use only)

	Your Score	**Max Score**
Problem 1		40
Problem 2		30
Problem 3		30
Total		100

Problem 1: 40 points.

What will print to the screen when each of the following snippets of code is executed in IDLE?

Be very clear with spacing, line breaks, etc.

Note: the parts of this problem are *independent*.

(a)
```
z = 3
print(z)
```

(b)
```
s = "x"
print(s, "yz")
```

(c)
```
a = 5
b = 4
c = a // b
print(c)
```

(d)
```
x = 14
print(x+2)
print(x)
```

(e)
```
y = 5
if y < 2:
    print(y)
print(y)
```

(f)
```
z = 8
if z >= 8:
    print("dog")
elif z < 12:
    print("cat")
```

(g)
```
q1 = 20 < 3
q2 = 3 == 4
q3 = q1 or q2
print(q3)
```

(h)
```
for i in range(4):
    print("monkey")
```

(i)
```
for i in range(5):
    print(i)
```

(j)
```
for i in range(0, 10, 3):
    print(i+1)
```

Problem 2: 30 points.

Write snippets of code to do the following. Your code should only print the requested output. You will lose points for printing additional output.

You can assume that all your snippets are enclosed within a main function and that any necessary libraries have been imported. You only need to write the specific lines of code that accomplish each task.

(a) Ask the user to enter a price in US dollars. Assume the user enters a valid integer. Then print that price in *cents*.

(b) *Assume:*
- o Two variables *a* and *b* have already been assigned values for you. Do not overwrite these values.

Your task: If *a* and *b* are the legs of a right triangle, compute that triangle's perimeter. Helpful facts:
- o The perimeter of a triangle is the sum of the lengths of the two legs and the hypotenuse.
- o The length of the hypotenuse has the following relationship to the lengths of the legs:

$a^2 + b^2 = c^2$

(c) Ask the user to enter an integer. If the user enters a valid integer, print "Congratulations, ____ is an integer!" (filling in the number the user entered)

   If the user does not enter a valid integer, print "Fail!" Your program should not crash.

(d) Ask the user to enter 40 words or phrases. Afterward, print the number of times the user's input was the word `chicken`.

Problem 3: 30 points.

For this problem, you must write a **complete program**. That includes a docstring, a `def main()`, any necessary library imports, etc.

Read the instructions carefully before you start coding!

Your program should do the following:
1. Prompt the user to enter 25 grades. You can assume that the user enters valid numbers.

2. If the user enters a grade that is less than zero or greater than 100, print an error message and exit the program immediately.

3. If the user has entered 25 legitimate grades, print the average (mean) of those grades.

4. Print the user's letter grade according to the following scale. Decimal values should be *truncated* (cut off) – in other words, grades are rounded down.

    You should only print the user's letter grade once.
    o   90+ = A
    o   80-89: B
    o   70-79: C
    o   60-69: D
    o   Below 60: F