CS 115 Exam 1, Fall 2012

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 the indentation level of each statement is clear.

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)
```
x = -4.6
print(x)
```

(b)
```
school = "Sonoma State"
print("school", "=", school)
```

(c)
```
a = 12
b = 2
c = a % b
print(c)
```

(d)
```
var = 3
print(var ** 2 + 2 * 2)
```

(e)
```
y = 1
print(y + 6)
print(y)
```

(f)
```
for j in range(2):
     print("Sonoma")
print("State")
```

(g)
```
for m in range(4):
     print(m ** 2)
```

(h)
```
x = 1
for i in range(3):
      x = x + i
print(x)
```

(i)
```
y = "hello"
if y != "hello":
    print(y)
if y != "goodbye":
    print("goodbye")
```

(j)
```
a = 12
if a < 0:
    print("brownies")
elif a < 5:
    print("cookies")
else:
    print("cake")
```

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 weight in ounces. Assume the user enters a valid positive number. Then print the equivalent mass in *grams*. Use 1 oz = 28.3495 grams to do your conversion.

(b) *Assume:*
   o   A variable *p* already exists and contains a value for you to use. Do not try to redefine *p* or overwrite its value.
   o   Assume that the math library has been imported.
   Your task: If *p* is the perimeter of a square, print the <u>area</u> of that square.
   Helpful facts:
      A square has 4 sides that are all the same length (call it *s*).
      The area of a square = the square of *s* (s^2)
      The perimeter of a square = the sum of the 4 sides (4*s*)

(c) Prompt your user to enter 500 numbers (you should prompt them 500 times). You can assume that the user enters 500 valid numbers. After the user has entered all of the numbers, print the number of times the user entered a positive value.

(d) Repeat the following actions 1000 times (your user is very patient):
- Ask the user for the name of a band they like.
- If the user types `Nickelback`, print `Hi, Chad Kroeger!`
- If the user types anything else, print nothing and go on to the next band.

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! If you get stuck, try to maximize your partial credit.

Your program should do the following:

1. Ask the user to enter the number of minutes they worked out for 365 days. Here is an example, with sample user input *underlined and italicized:*

   ```
   Day 1 minutes: 30.5
   Day 2 minutes: 45
   ```

   If any of the user's entries are negative, print a warning message but continue with the program. You can assume that the user will only enter numbers.

2. After the user has entered all of their data, print the total number of minutes the user worked out and the average number of minutes. For example:

   ```
   Total minutes this year: 36500
   Average minutes per day: 100
   ```

3. If all of the user's entries were non-negative, print the minimum number of minutes along with the day (Day 1, Day 2, etc.) that the user entered this number. If there is a tie for the minimum, it doesn't matter which day you print. For example:

   ```
   Minimum minutes worked: 2 (Day 351)
   ```

[EXTRA SPACE]