

## CS 115 Exam 1, Spring 2013

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)

	<b>Your Score</b>	<b>Max Score</b>
Problem 1		40
Problem 2		30
Problem 3		30
<b>Total</b>		100

### Problem 1: Tracing code (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)

```
a = 10
print(a)
```

(b)

```
x = 6
y = 1 + x ** 2 // 2
print(x, y)
```

(c)

```
a = 3
b = 2
a += b
print(a, b)
```

(d)

```
for k in range(4):  
    print(k)  
print("k")
```

(e)

```
q = 0  
if q < 2:  
    print("cat")  
if q >= 0:  
    print("dog")  
print("mouse")
```

(f)

```
a = 4  
while a < 20:  
    a = a * 2  
    print(a)
```

(g)

```
q = 0
if q < 2:
    print("cat")
elif q >= 0:
    print("dog")
else:
    print("mouse")
```

(h) x = 12

```
for i in range(5):
    x = x + i
print(x)
```

(i)

```
y = "hello"
try:
    z = int(y)
    print("tiger")
except ValueError:
    print("jaguar")
print("lion")
```

## Problem 2: Short snippets of code (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.

**Do not use `sys.exit()` in your solutions to Problem 2.**

- (a) Ask the user to enter the number of kilometers they drove today.  
You can assume the user enters a numeric value.  
If the user's input is negative, print an error message.  
Otherwise, tell them how many miles they drove (1 mi = 1.60934 km).

- (b) Ask the user to enter 300 integers. You can assume that the user only enters valid integers.  
After the user has entered all 300 integers, print the sum of all the **even** integers entered by the user.

- (c) Ask the user for the name of the greatest band (or artist) in the history of music.  
If the user guesses your favorite band/artist/etc., compliment their taste.  
Otherwise, tell the user they are incorrect and prompt them to try again.  
Repeat these actions until the user guesses correctly.

### Problem 3: A complete program (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 students in a class.  
If the user does not enter a valid positive integer, print an error message and exit the program.
2. Prompt the user to enter each student's grade.  
If the user does not enter a numeric value between 0 and 100 for each student, print an error message and exit the program.
3. Once all the grades have been entered, print the number of students who got Cs (at least 70 but less than 80), Ds (at least 60 but less than 70), and Fs (less than 60).

[EXTRA SPACE]