

## CS 350 Quiz 1: In-Class

1. (3 pts.) How do *interpreted* and *compiled* languages differ? How are they alike?
  
2. (3 pts.) What is meant by *mutable* and *immutable* data? Give an example of each.
  
3. (3 pts.) Explain the difference between `==` and `is`.
  
4. (3 pts.) Explain the difference between `/` and `//`. When do they behave the same?
  
5. (3 pts.) Write a `for`-loop that will display the numbers that are evenly divisible by 3 between 1 and 100 inclusive.
  
6. (8 pts.) For a list `LST`, write a statement using a *slice* that will
  - a) returns a list of the first six items in `LST`
  
  - b) returns a list of the last six items in `LST`
  
  - c) returns a list of the third, fourth, and fifth items in `LST`
  
  - d) returns a list of every other item in `LST`

7. (3 pts.) If  $p$ ,  $q$ , and  $r$  are Boolean variables, write code that will display the string “*At least one is false*” if and only if one or more of the variable is *False*.
  
8. (3 pts.) Write code to calculate and print the value of  $\sqrt{-11}$ .
  
9. (4 pts.) Using the `sin()` function from the `math` module, write *all* the code needed to print the value of the *sin* of *0.85 radians*.
  
10. (5 pts.) Write a single function that prompts the user to enter their name, address, and phone number, reads each value, and returns all three values. Show how you would use this function.

11. (12 pts.) In this problem you will design a class hierarchy in Python. Please address each of the following taking care to identify your answers.

- a) Describe the class definitions for a hierarchy of classes: *sphere*, *ball*, *soccer ball*. Tell where you would place the following attributes in your hierarchy: *manufacturer*, *radius*, *usage* (e.g., which sport), *volume*, and *price*.
- b) What general properties would a sphere and a soccer ball have in common? How would you deal with these properties?
- c) If you wanted to distinguish between *inflatable* balls (e.g., soccer balls and basket balls) and *solid-core* balls (e.g., baseballs and golf balls), how would you incorporate this into your design?