Midterm Review
Midterm Logistics

• If last name starts with A-O (inclusive)
  – Go to DRLB A1

• If last name starts with P-Z (inclusive)
  – Go to Levine 101 (Wu & Chen)
  – That’s our regular classroom!

• If the average is low, grades will be curved

• Homework 4 will be graded by Saturday night
Functions

• Three ways to exit
  1. Return a value
     – Just returns the value
  2. Just call return
     – Returns None
  3. Don’t call return at all
     – Returns None
Collections

- Lists, sets and dictionaries are mutable
- Strings and tuples are immutable
- Lists and strings can be concatenated with +
Classes

• All functions defined inside a class are called methods
  – If they have self as a parameter, they belong to the object
  – If they don’t have self, they belong to the class

• Classes can extend other classes
  – Get superclass by calling super()
  – Can call all methods and access all variables in the superclass
Call by value vs. reference

• Rule of thumb: if a function takes an int, float or boolean as input, then it cannot change those inputs
  – These are called by value, so if you try to change them, you just create a new local variable but you don’t change the input
• If the input is a collection, then it’s passed by reference
  – You can access elements in the collection and change them
  – But if you try to change the reference (i.e., the input variable), then you created a local variable and cannot change the input anymore
• Think of the input to a function as a value in a box
  – You can only see what’s inside the box
  – The box is wiped out after the function exits
  – But if the box contains a reference, you can follow that reference
• Strings and tuples are also passed by reference but are immutable so you can’t change them