Classes are blueprints or designs while an *object* in an instantiation of a class.

1. Compare instance vs. static attributes:

	Instance	Static
Where do you declare it?		
How do you call/ reference it?		
How many of these attributes exist *per class*?		

2. What is wrong with the following piece of code?

```
class Student(object):
    def __init__(self, name, age):
        self.__name = name
        self.__year = year

    def getTimeUntilGraduation(self):
        self.__timeUntilGraduation = 4 – self.__year
        return self.__timeUntilGraduation
```

3. Which of the following are true about dictionaries? If the statement is false, correct it to make it true.

    i.   Any type can act as a key.

    ii.   Keys must be unique.

    iii.   Writing to a key that already exists just appends to its value.

    iv.   There is no need to check is a key exists before reading from it.

4. Which of the following is NOT a class you have used?

    i.   List

    ii.   String

    iii.   Int

    iv.   Dictionary

5. When creating a child class, what is the first thing you must do in the constructor?

6. What is the purpose of getters and setters? When do you need them? Write them.

Coding Questions

7. There is a dictionary where the key is a student's name (you may assume these are unique), and the value is a list of scores that student has for ITP 115. You also have access to a function called avg(list) that takes in 1 parameter, a list of integers or doubles, and returns the average of that list. Write a function that takes in the dictionary and the name of a student as its two parameters, and returns the students average score in ITP 115. If the student is not in ITP 115, return -1.

8. Every student has a name, a GPA, and a tuition they pay. The standard tuition is $50,000. However, in-state students receive a flat decrease of $10,000 in tuition. Out-of-state students do not receive this flat decrease, but their tuition does go down based on their academic performance. Specifically, they receive $1000 off their tuition for every GPA point they have (for example, an out-of-state student with a 3.14 GPA would receive a decrease of $3,140). Write a base Student class, and two classes, InStateStudent and OutOfStateStudent, that inherit from Student and calculate how much each student will have to pay in tuition.