

## Java Basics / CS 302 / Chapters 1-2

1. What is the Java Virtual Machine (JVM) and what does it do?
2. Which of the following are invalid Java identifiers? Why?
  - a. 2cool
  - b. tupac4ever
  - c. \_foo
  - d. class
  - e. Class
  - f. bobo the dog
  - g. go-badgers
  - h. object
3. What does it mean to say that Java identifiers are *case sensitive*?
4. There are two categories of types in Java: primitive and reference. Define each category and give some examples? How are these two categories different? Are String variables of primitive or reference type?
5. What do the following lines of code output?
  - a. `System.out.println(4 * 5 + 6);`
  - b. `System.out.println(4 * (5 + 6));`
6. What is overloading? Name two overloaded methods in the String class. (Hint: Use the Java API documentation.)
7. Explain the difference between an object and an object reference.
8. Explain the difference between an object and a class.

9. What does the variable `duck` contain in the following example?

```
String duck = "quack";
```

10. Write a Java class whose main method initializes a single `String` object and uses it to print out your name twice; once in all lowercase and once in all uppercase characters.

11. Diagram the Edit-Compile-Test cycle. Clearly distinguish between files and the applications that produce or use them. Where do logic errors come in? Syntax errors?