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Unit 5 Exam 1 Review - Solutions

1. Describe the relationship between classes and objects.

   Classes are the data type, while objects are variables that have been initiated with that type.
   So in the code, String s = "Howdy", s is an object whose type is the String class.

2. Compare and contrast primitive and class data types.

   Primitive types hold only one piece of data at a time. Examples include int, double and boolean. Class types can hold more than one piece of data and have methods. Primitives are stored directly in memory while class type variables store a reference to the object's location.

3. In general, all variables should be public / private . (circle one and explain your answer below)

   Declaring variables as private prevents other users from directly accessing the variable and inserting possible errors or invalid values.

4. Describe the roles that accessors and mutators play in developing classes.

   They allow the user to retrieve and store data in a controlled way. The programmer who creates a class can prevent accidental errors from being injected into the object. Accessors return stored values while mutators allow the user to alter those values.

5. Give an example of a static method you have used in a program.

   The main method and most methods from the Math class, including pow, random, and sqrt are all examples of static methods that we have used in this class.

6. What is constructor chaining?

   Constructor chaining is a technique in which one constructor calls another. This serves two purposes: security and simplification. By using previously written constructors we can avoid writing new code that may introduce new bugs and errors. We can also minimize the amount of code that needs to be written, since most of the work is being done in a more complicated constructor.

