**Take-Home: Quiz 6 (15 pts) – Inheritance in C++**

***Part I: Short Answer.***

**1. (4 pts)** What is inheritance? Explain.

**2. (5 pts)** In your own words, explain the “diamond” problem in C++.

***Part II: Fill-In-The-Blank.***

**3. (2 pts – 1 pt/blank)** A base class’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ members can be accessed in the base-class definition, in derived-class definitions, and in friends of the base class and derived classes.

**4. (2 pts)** Inheritance is representative of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ relationship. A Rectangle object demonstrates this relationship because it can be treated as a Shape object.

**5. (2 pts)** When an object of a derived class is instantiated, the base class’ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called implicitly or explicitly to initialize the data members of the base-class in the derived-class object.