Name: Michael Beaver

Course:	CS 355	Assignment Number:	7
Semester:	Fall 2012	Assignment Type:	Homework 5

Assignment Description:	Complete the assessment on Angel
Assignment Due Date:	Tuesday, October 9, 2012 (first half of class)
To Be Included in Portfolio:	YES

Total Grade: Multiple choice and Short Answer (100 points)

Use your completed Pair, Triple, and Quad hierarchy to complete this assignment. You will create a driver to explore the relationships between base classes and derived classes. Your grade will be assigned through Angel.

For the purposes of the portfolio, complete this sheet with 5 things you learned about inheritance after completing this exercise. The 5 statements should be complete thoughts and sentences. You should be able to fit them on the remainder of space on this page.

5 Statements

(1) Base class objects cannot call methods in derived classes. For example, a Pair object cannot call SetZ because SetZ is a Quad class method.

(2) Derived class objects can call base class methods. For example, Pair, Triple, and Quad can all call Set and SetX because these methods are either inherited (SetX) or overloaded (Set).

(3) If an array of base class pointers (e.g., an array of Pair pointers) is made to point at base and derived class objects and an overridden method is called (e.g., Print), then the base class method will be called for all objects, whether a base object or derived object. Of course, this might not be the desired effect since, for example, half of a Quad object's values are not printed when using Pair's Print method.

(4) Base classes can point to derived class objects, but derived classes cannot point to base class objects. For example, a Pair pointer can point to a Quad object, but a Quad pointer cannot point to a Pair object. The Quad class inherits from the Pair class, so it makes no sense to say that the derived class can point to an object / class it inherits from. The Quad class is an extension of Pair, so a Pair pointer can point to a Quad object. However, Pair is not an extension of Quad, so a Quad pointer cannot point to a Pair object.

(5) Derived classes cannot access private base class members. However, derived classes can access protected base class members, at least with public inheritance. Hence, any data members that need to be accessed by derived classes should be protected, not private.