Chapter 7 Questions

1. To what noun does the adjective “polymorphic” apply?
   - Method
2. Distinguish between dynamically bound methods and statically bound data members.
   - Methods are pulled from the actual subclass, data members from the class of the compile-time expression type.
3. On what syntactic structure is a “cast” applied?
   - An expression
4. Do casts generate compile time or runtime errors?
   - Runtime
5. What is “Hoare's rule of consequence” and how does it apply to exceptions and subclass methods?
   - Suppose P1 is true before S starts and Q1 is true after S terminates. If P -> P1 and Q1 -> Q, then if P is true before S starts, Q will be true after S terminates. (If you tighten the preconditions and loosen the postconditions, it still works.)
   - A subclass object can be used in place of a parent class object since it has all the methods of a parent class object (tightening the precondition, since it is not just any parent class object, but limited to an object of the subclass), so long as it doesn't throw any new exceptions (loosening the postcondition by possibly omitting some of the exceptions that it might generate).
6. What is multiple inheritance?
   - The ability to inherit method signatures from multiple classes
   - Not supported in Java; use interfaces instead
7. What approach (keyword) in Java is used in place of multiple inheritance?
   - interface
8. With what syllable do interface names frequently end?
   - -able
9. Name two Java techniques to determine the class of an object.
   - instanceof
   - getClass()
10. What is the alternative way to implement a thread without subclassing Thread?
    - Use the runnable interface
11. Variables may be of primitive type, class type, array type, and what fourth type?
    - interface