

## Discussion Questions for “Inheritance”

1. What is the main reason that inheritance exists? Why bother with inheritance? What is the advantage?
2. Everything demonstrated so far shows inheritance of ONE and only one parent class. In fact, Java allows only one parent class per child class. Can you imagine and describe some of the complications that would result from allowing a child class to extend multiple parents? Can you think of ways to resolve these problems?
3. The lecture on inheritance shows only one level of inheritance, one parent base class, and one child derived class. Is it possible for a class to extend a class which extends another class, so that there is a grandparent / grandchild relationship? Would the grandchild class inherit both the grandparent and the parent class fields and methods? Is there a limit on the number of levels of inheritance?
4. Java does not allow a child class to extend a class which is descended from the child class itself. In other words, Java does not allow circular inheritance. Why does Java impose that limitation?
5. Even though the total number of potential Java classes is infinite, the number of classes actually implemented must be finite. With that in mind, can you prove that every descendant class has an ancestor which does not explicitly extend another class?