# Chapter Review Questions

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Chapter 9 Review Questions (10 points):

1. Explain ways in which inheritance promotes software reuse, saves time during program development, and helps prevent errors.

**It allows us to reuse our code for classes that are related. It prevents us from having to copy-paste members that will be reused. This saves us time from having to rewrite or copy our code.**

1. Some programmers prefer not to use protected access, because they believe it breaks the encapsulation of the superclass. Discuss the relative merits of using protected access versus using private access in superclasses.

**Being able to access the superclass’s members from the subclass may be useful in certain cases when we need to be able to directly modify the contents of a superclass’s members. We don’t need to have methods to interact with this data.**

1. Write a single line of code that specifies that class HourlyWorker inherits from class Employee.

**class HourlyWorker extends Employee {}**

1. Write a single line of code that calls the superclass Employee’s toString method from subclass SalaryWorker’s toString method.

**public void toString(){**

**super.toString();**

**}**

1. What does the following code fragment do, assuming that the following method call is located in an overridden method named CalculateEarnings in a subclass: super.CalculateEarnings() ?

**It calls the superclass’s calculate earnings method from within the subclass.**

1. What does the following line of code perform before a method declaration with @Override ?

**It indicates that the subclass method to follow is an overridden method of the superclass.**

1. Explain why you would use super in the first statement of a subclass constructor’s body.

**This is to save time by calling the superclass’s constructor from within the subclass constructor.**

1. Explain why you would use super in the body of a subclass’s instance method.

**This is to be able to call the superclass’s methods from within the instance method’s body.**

1. Assume that the following line of code appears as the first statement in a constructor’s body:

super(ArgumentOne, ArgumentTwo);

what is performed by the code?

**The superclass’s constructor is being called, and the 2 arguments are being passed to the superclass’s constructor.**

1. Explain the difference between a has-a relationship (also known as composition) and an is-a relationship when working with classes and objects.

**An is-a relationship is based on inheritance, whereas a has-a relationship is based on composition. In an is-a relationship, a class is derived from another class. In a has-a relationship, a class contains other class objects.**