

Name: _____

Score: ____ / ____

Quiz Chp 9: Inheritance

Part 1: Main

1

What is a class called that represents the most general entity in an inheritance hierarchy?

- ☐ A. Default class.
- ☐ B. Superclass.
- ☐ C. Subclass.
- ☐ D. Inheritance class.

2

Which class represents a more specific entity in an inheritance hierarchy?

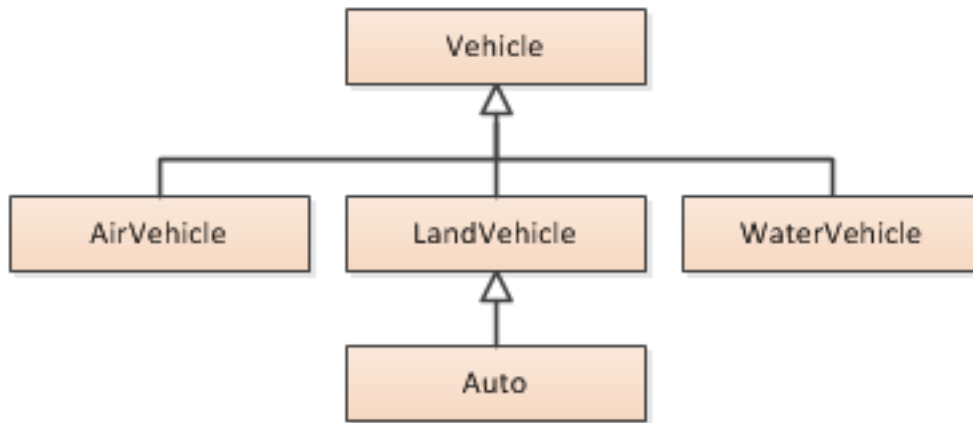
- ☐ A. Default class
- ☐ B. Superclass
- ☐ C. Subclass.
- ☐ D. Inheritance class.

3

You are creating a class inheritance hierarchy about motor vehicles that will contain classes named Vehicle, Auto, and Motorcycle. Which of the following statements is correct?

- ☐ A. Vehicle should be the default class, while Auto and Motorcycle should be the subclasses.
- ☐ B. Vehicle should be the superclass, while Auto and Motorcycle should be the subclasses.
- ☐ C. Vehicle should be the subclass, while Auto and Motorcycle should be the superclasses.
- ☐ D. Vehicle should be the subclass, while Auto and Motorcycle should be the default classes.

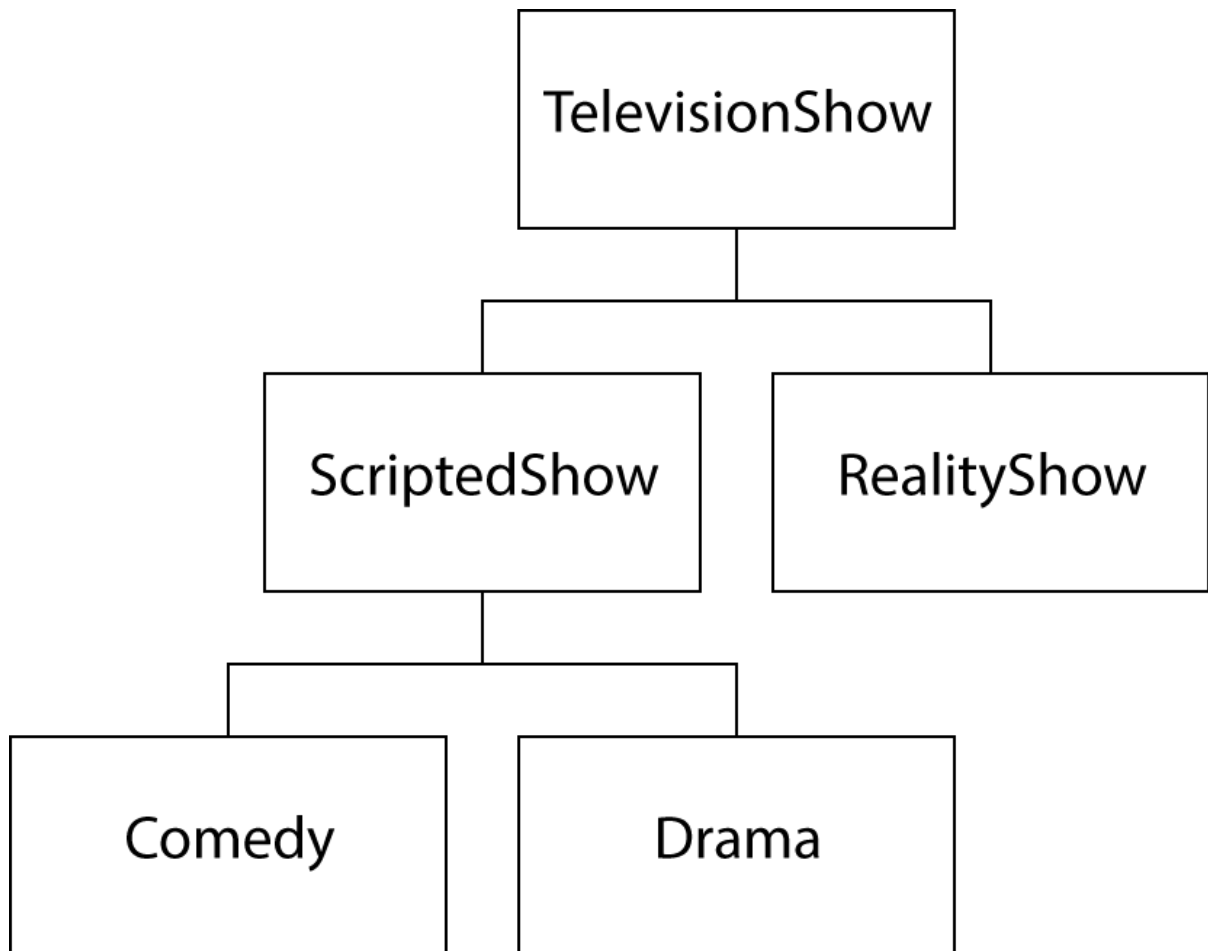
Consider the following inheritance hierarchy diagram:



Which of the following statements is correct?

- ☐ A. Auto is a superclass of LandVehicle, and LandVehicle is a superclass of Vehicle.
- ☐ B. Auto is a superclass of LandVehicle, and LandVehicle is a subclass of Vehicle.
- ☐ C. Auto is a subclass of LandVehicle, and LandVehicle is a superclass of Vehicle.
- ☐ D. Auto is a subclass of LandVehicle, and LandVehicle is a subclass of Vehicle.

Consider the hierarchy of classes shown below.



Which represent valid class headers that would be found in this hierarchy?

- A.
- ☐ `public class ScriptedShow extends TelevisionShow { . . . }`
`public class Comedy extends ScriptedShow { . . . }`
- B.
- ☐ `public class TelevisionShow extends ScriptedShow { . . . }`
`public class ScriptedShow extends Comedy { . . . }`
- C.
- ☐ `public class Drama extends TelevisionShow { . . . }`
`public class Comedy extends Drama { . . . }`
- D.
- ☐ `public class ScriptedShow extends RealityShow { . . . }`
`public class RealityShow extends ScriptedShow { . . . }`

Consider the hierarchy of classes shown below.



What is the superclass of the class **TelevisionShow**?

- ☐ A. Object
- ☐ B. Comedy
- ☐ C. RealityShow
- ☐ D. This class has no superclass

Consider the classes shown below:

```
public class Parent
{
    public int getValue()
    {
        return 24;
    }
    public void display()
    {
        System.out.print(getValue() + "");
    }
}

public class Child extends Parent
{
    public int getValue()
    {
        return -7;
    }
}
```

Using the classes above, what is the output of the following lines of code?

```
Parent kid = new Child();
Parent adult = new Parent();
kid.display();
adult.display();
```

- ☐ A. -7 24
- ☐ B. 24 24
- ☐ C. -7 -7
- ☐ D. 24 -7

Which of the following is true regarding subclasses?

- ☐ A. A subclass that inherits methods from its superclass may not override the methods.
- ☐ B. A subclass that inherits instance variables from its superclass may not declare additional instance variables.
- ☐ C. A subclass may inherit methods or instance variables from its superclass but not both.
- ☐ D. A subclass may inherit methods and instance variables from its superclass, and may also implement its own methods and declare its own instance variables.

9

Which of the following is true regarding subclasses?

- ☐ A. A subclass has access to private instance variables of its superclass.
- ☐ B. A subclass does not have access to public instance variables of its superclass.
- ☐ C. A subclass must specify the implicit parameter to use methods inherited from its superclass.
- ☐ D. A subclass has no access to private instance variables of its superclass.

10

What must a subclass do to modify a private superclass instance variable?

- ☐ A. The subclass must simply use the name of the superclass instance variable.
- ☐ B. The subclass must declare its own instance variable with the same name as the superclass instance variable.
- ☐ C. The subclass must use a public method of the superclass (if it exists) to update the superclass's private instance variable.
- ☐ D. The subclass must have its own public method to update the superclass's private instance variable.

11

Which reserved word must be used to call a method of a superclass?

- ☐ A. this
- ☐ B. my
- ☐ C. parent
- ☐ D. super

12

If a subclass defines the same method name and the same parameter types for a method that appears in its superclass, which statement is true?

- ☐ A. the subclass method overloads the superclass method.
- ☐ B. the subclass method overrides the superclass method.
- ☐ C. the subclass has implemented the method on behalf of the superclass.
- ☐ D. a compiler error will occur.

13

What is the term used for a subclass that defines a method with the same name as a method in its superclass, but with different parameter types?

- ☐ A. implementing
- ☐ B. inheriting
- ☐ C. overriding
- ☐ D. overloading

14

Consider the following code snippet:

```
public class Auto extends Vehicle
{
    ... public Auto(int numberAxles)
    {
        super(numberAxles);
    }
}
```

What does this code do?

- ☐ A. It invokes the constructor of the Vehicle class from within the constructor of the Auto class.
- ☐ B. It invokes the constructor of the Auto class from within the constructor of the Vehicle class.
- ☐ C. It invokes a private method of the Vehicle class from within a method of the Auto class.
- ☐ D. This code will not compile.

15

When the reserved word super is followed by a period and a method name, what does it indicate?

- ☐ A. A call to a superclass method.
- ☐ B. A call to a superclass constructor.
- ☐ C. A call to a subclass method.
- ☐ D. A call to a subclass constructor.

16

Which of the following statements is true about using the reserved word super to call a superclass constructor?

- ☐ A. The call must use the keyword super followed by a period and a method name.
- ☐ B. The call must use the keyword super with no arguments.
- ☐ C. The call must be the last line of the subclass constructor.
- ☐ D. The call must be the first line of the subclass constructor.

17

In Java, two methods can have the same name provided that what is true?

- ☐ A. They cannot be defined in the same class.
- ☐ B. They must differ in their parameter types.
- ☐ C. One must be private and the other public.
- ☐ D. They must be related to each other through inheritance.

18

Which of the following statements about abstract methods is true?

- ☐ A. An abstract method has a name, parameters, and a return type, but no code in the body of the method.
- ☐ B. An abstract method has parameters, a return type, and code in its body, but has no defined name.
- ☐ C. An abstract method has a name, a return type, and code in its body, but has no parameters.
- ☐ D. An abstract method has only a name and a return type, but no parameters or code in its body.

19

Which of the following statements about classes is true?

- ☐ A. You can create an object from a concrete class, but not from an abstract class.
- ☐ B. You can create an object from an abstract class, but not from a concrete class.
- ☐ C. You cannot have an object reference whose type is an abstract class.
- ☐ D. You cannot create subclasses from abstract classes.

20

When declared as protected, which statement is true about the access to data in an object?

- ☐ A. The data is accessible only by that class's methods and by all of its subclasses
- ☐ B. The data is accessible only by that class's methods, by all of its subclasses, and by methods in classes within the same package.
- ☐ C. The data is accessible only by that class's methods.
- ☐ D. The data is accessible by any class.

21

Consider the following code snippet:

```
public class Vehicle
{
protected int numberAxles;
...
}
```

Which statement is true about the accessibility of data in the numberAxles variable?

- ☐ A. It is only accessible by the Vehicle class's methods and by all of its subclasses
- ☐ B. It is only accessible by the Vehicle class's methods, by all of its subclasses, and by methods in classes within the same package.
- ☐ C. It is only accessible by the Vehicle class's methods.
- ☐ D. It is accessible by any class.

22

When identifying the proper instance variables to use in the design of an inheritance hierarchy, how do you decide where in the hierarchy a variable should be placed?

- ☐ A. Instance variables should only be declared in the superclass and then accessed using the super keyword.
- ☐ B. Instance variables should only be declared in subclasses.
- ☐ C. Instance variables that are common to all classes should be placed at the base of the hierarchy.
- ☐ D. Instance variables that are relevant to only one class should be placed at the base of the hierarchy.