### Building Java Programs Polymorphism with Casting

|  |  |
| --- | --- |
| 2. Assuming the following classes have been defined:  public class Harry {  public void method1() {  System.out.println("harry 1");  }  public void method2() {  method1();  System.out.println("harry 2");  }  }  public class Larry extends Harry {  public void method1() {  System.out.println("larry 1");  super.method1();  }  }  public class Mary extends Larry {  public void method2() {  System.out.println("mary 2");  }  public void method3() {  super.method1();  System.out.println("mary 3");  }  }  public class Jerry extends Mary {  public void method2() {  super.method2();  System.out.println("jerry 2");  }  }  And that the following variables have been defined:  Harry var1 = new Harry();  Harry var2 = new Larry();  Larry var3 = new Jerry();  Mary var4 = new Mary();  Mary var5 = new Jerry();  Object var6 = new Larry(); | What is the output produced by each statement below? If the statement produces more than one line of output, indicate the line breaks with slashes as in "a/b/c". If the statement causes an error, write either "compiler error" or "runtime error" as appropriate.  Statement  var1.method1(); harry 1  var2.method1(); larry 1 // harry 1  var3.method1(); larry 1 // harry 1  var4.method1(); larry 1 // harry 1  var5.method1(); larry 1 // harry 1  var6.method1(); compiler error  var1.method2(); harry 1 // harry 2  var2.method2(); larry 1 // harry 1//harry 2  var3.method2(); mary 2 // jerry 2  var4.method2(); mary 2  var5.method2(); marry 2 // jerry 2  var6.method2(); compiler error  var3.method3(); compiler error  var5.method3(); larry 1 / harry 1 / mary 3  ((Larry)var1).method1(); runtime error  ((Mary)var2).method2(); runtime error  ((Jerry)var5).method1(); larry 1 / harry 1  ((Mary)var3).method3(); larry 1 / harry 1 / mary3  ((Jerry)var4).method3(); runtime error  ((Mary)var6).method3(); runtime error |