|  |  |
| --- | --- |
| 1. Consider the following classes:  public class Frodo extends Bilbo {  public void method1() {  System.out.println("Frodo 1");  super.method1();  }  public void method3() {  System.out.println("Frodo 3");  }  }  public class Gandalf {  public void method1() {  System.out.println("Gandalf 1");  }  public void method2() {  System.out.println("Gandalf 2");  method1();  }  }  public class Bilbo extends Gandalf {  public void method1() {  System.out.println("Bilbo 1");  }  }  public class Gollum extends Gandalf {  public void method3() {  System.out.println("Gollum 3");  }  }  Suppose the following variables are defined:  Gandalf var1 = new Frodo();  Gandalf var2 = new Bilbo();  Gandalf var3 = new Gandalf();  Object var4 = new Bilbo();  Bilbo var5 = new Frodo();  Object var6 = new Gollum(); |  |

In the table below, indicate in the right-hand column the output produced by the statement in the left-hand column. If the statement produces more than one line of output, indicate the line breaks with slashes as in "a / b / c" to indicate three lines of output with "a" followed by "b" followed by "c". If the statement causes an error, fill in the right-hand column with the phrase "compiler error" or “runtime error” to indicate this as appropriate.

|  |  |
| --- | --- |
| Statement  (a) var1.method1();  (b) var2.method1();  (c) var3.method1();  (d) var4.method1();  (e) var5.method1();  (f) var6.method1();  (g) var1.method2();  (h) var2.method2();  (i) var3.method2();  (j) var4.method2();  (k) var5.method2();  (l) var6.method2();  (m) ((Bilbo)var1).method3();  (n) ((Gandalf)var1).method2();  (o) ((Frodo) var4).method1();  (p) ((Gandalf)var6).method2();  (q) ((Gandalf)var4).method1();  (r) ((Frodo)var6).method3();  (s) ((Frodo)var3).method3();  (t) ((Frodo)var5).method3(); | Output  F1 b1  B1  G1  Compiler error  F1 b1  Compiler error  G2 f1 b1  G2 b1  G2 g1  Compiler error  G2 f1 b1  Compiler error  Compiler error  G2 f1 b1  Runtime error  G2 g1  B1  Runtime error  Runtime error  F3 |