1. Assume that the following classes have been defined:

```
public class Foo {
    public String toString() {
        return "foo";
    }

    public void method1() {
        System.out.println("foo 1");
    }

    public void method2() {
        System.out.println("foo 2");
    }
}

public class Bar extends Foo {
    public void method2() {
        System.out.println("bar 2");
    }
}

public class Baz extends Foo {
    public String toString() {
        return "baz";
    }

    public void method1() {
        System.out.println("baz 1");
    }
}

public class Mumble extends Baz {
    public void method2() {
        System.out.println("mumble 2");
    }
}
```

Consider the following code fragment:

```
Foo[] elements = {new Foo(), new Bar(), new Baz(), new Mumble()};
for (int i = 0; i < elements.length; i++) {
    System.out.println(elements[i]);
    elements[i].method1();
    elements[i].method2();
    System.out.println();
}
```

What output is produced by this code? (write the output as a series of 3-line columns in order from left to right)

2. Assume the following classes have been defined:

```
public class Foo extends Blue {
    public String toString() {
        return "foo";
    }

    public void method2() {
        System.out.println("foo 2");
    }
}

public class Blue extends Moo {
    public void method1() {
        System.out.println("blue 1");
    }
}

public class Shoe extends Foo {
    public void method1() {
        System.out.println("shoe 1");
    }
}

public class Moo {
    public String toString() {
        return "moo";
    }

    public void method1() {
        System.out.println("moo 1");
    }

    public void method2() {
        System.out.println("moo 2");
    }
}
```

Consider the following code fragment:

```
Moo[] elements = {new Shoe(), new Foo(), new Moo(), new Blue()};
for (int i = 0; i < elements.length; i++) {
    System.out.println(elements[i]);
    elements[i].method1();
    elements[i].method2();
    System.out.println();
}
```

What output is produced by this code? (write the output as a series of 3-line columns in order from left to right)

Solution to CSE142 Inheritance/Polymorphism Problems

1. The program produces the following output:

```
foo             foo             baz             baz
foo 1           foo 1           baz 1           baz 1
foo 2           bar 2           foo 2           mumble 2
```

2. The program produces the following output:

```
foo             foo             moo             moo
shoe 1          blue 1          moo 1           blue 1
foo 2           foo 2           moo 2           moo 2
```