

Practice #1:
Consider the following syntactically correct three Java classes:

File Slim.java:

```
public abstract class Slim{
    abstract public String getA();
    abstract public String getB();
}
```

File Narrow.java

```
public class Narrow extends Slim {
    protected String a;
    private String b;
    public Narrow(){
        a = "NarrowA_";
        b = "NarrowB_";
    }
    public String getA(){
        return a;
    }
    public String getB(){
        return b;
    }
}
```

File Wide.java

```
class Wide extends Narrow {
    private String c;
    public Wide(){
        super();
        c = "Wide_";
    }
    public String getA(){
        return c+a;
    }
    public String getB(){
        return super.getB() + c;
    }
    public String getC(){
        return c;
    }
}
```

Write the output produced by each of the following statements on the space provided below each statement without running the program. If you think the statement produces an error message, write the word “error” and explain the error.

Note: The three classes (Slim, Wide, Narrow, and WideNarrowTest) belong to the same package.

```
public class WideNarrowTest {
    public static void main (String[] args) {
        Wide wide = new Wide();
        Narrow narrow = new Narrow();
        Narrow narrowWide = wide;
        Slim slim = narrow;

        System.out.println(wide.getB());

        System.out.println(wide.c);

        System.out.println(wide.a);

        System.out.println(narrowWide.getA());

        System.out.println(narrowWide.getC());

        System.out.println(slim.getA());

    }
}
```

Statement	Output	Errors
System.out.println(wide.getB());	NarrowB_Wide_	
System.out.println(wide.c);		“c” is a private variable so we can’t print it from WideNarrowTest
System.out.println(wide.a);		“a” is a protected variable, we cannot print it from WideNarrowTest because it is not a subclass of Narrow
System.out.println(narrowWide.getA());	Wide_NarrowA_	
System.out.println(narrowWide.getC());		The class Narrow does not have a “getC” method so we cannot print it
System.out.println(slim.getA());	NarrowA_	