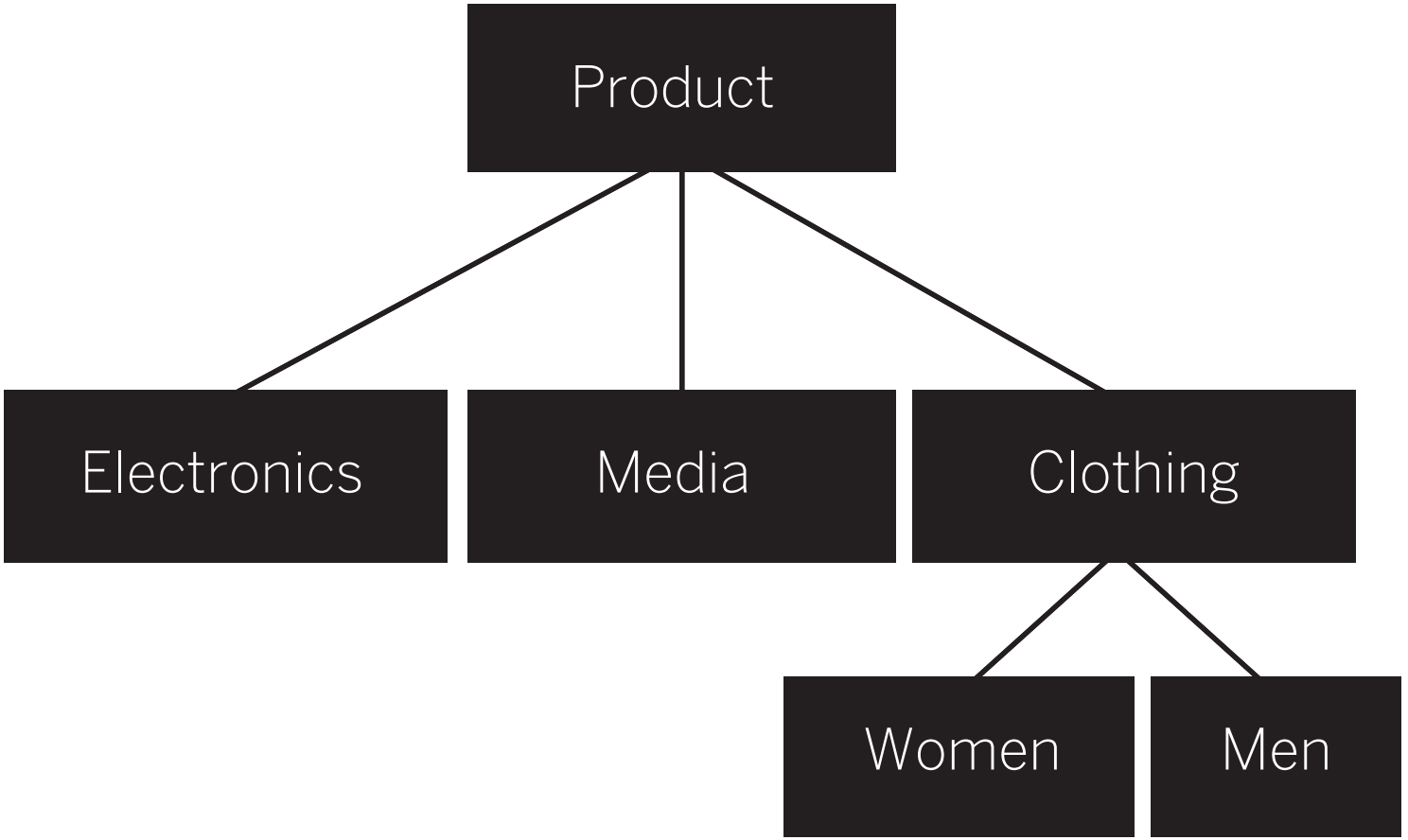
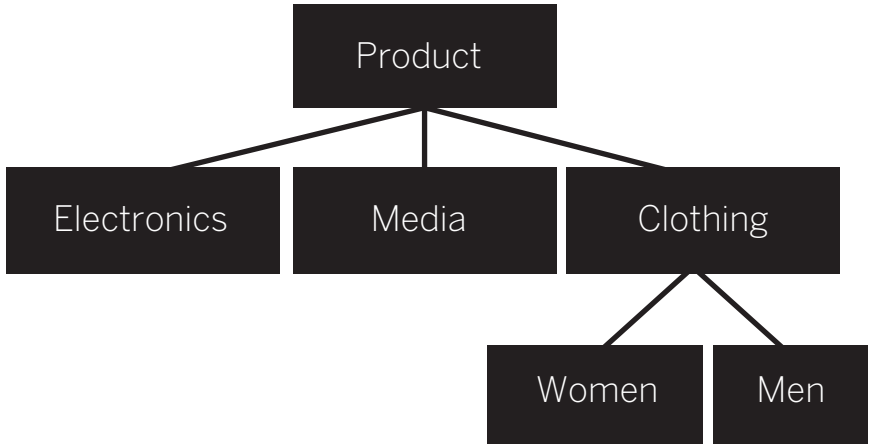
Term 2

Lesson 10

Is-a and Has-a Relationships

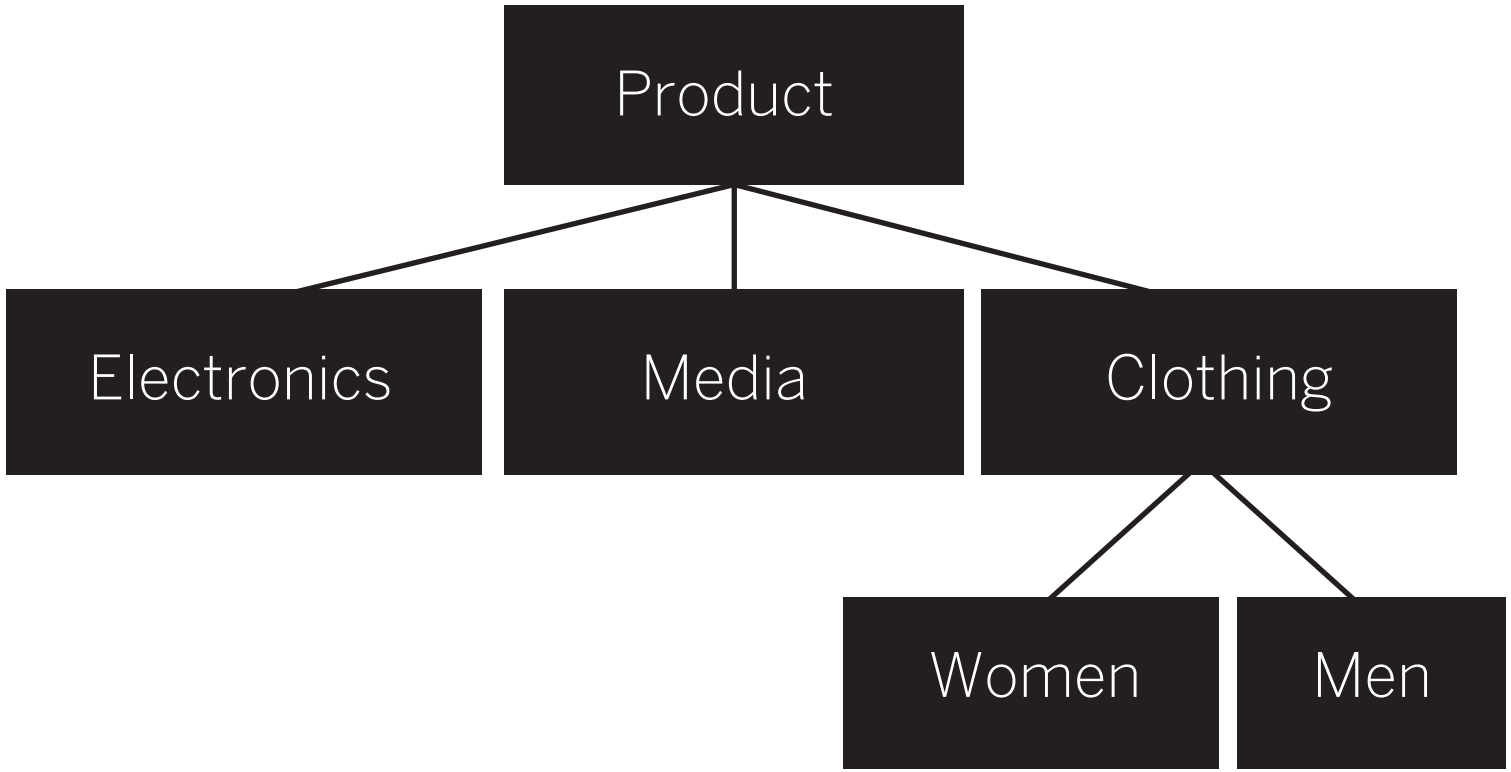

Product
Electronics
Media
Clothing
Women
Men

Consider the following hierarchy of products sold by an online store. Product is abstract, and all of the subclasses are not.



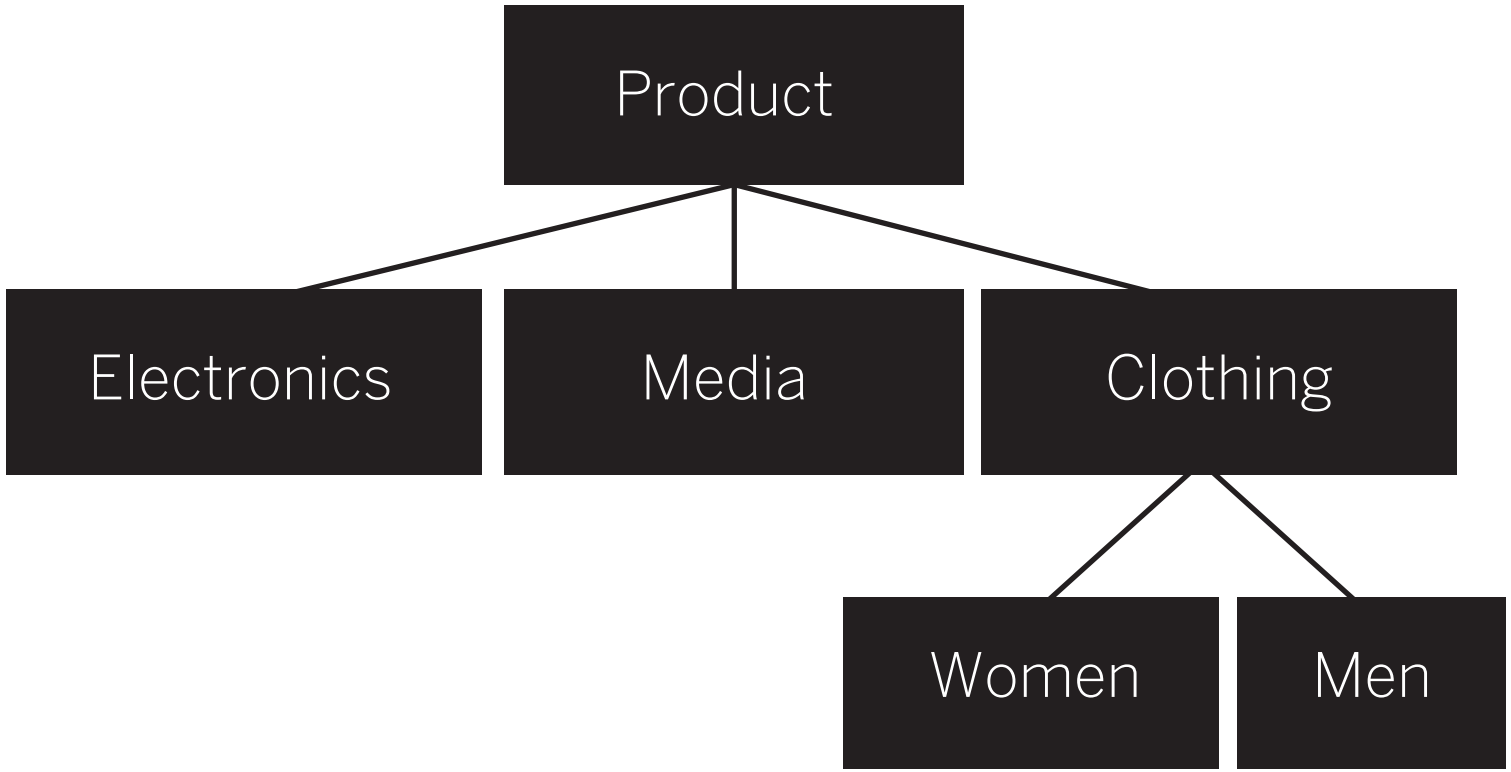
The following class headers show the relationship of the classes

```
public abstract class Product

public class Electronics extends Product
public class Media extends Product
public class Clothing extends Product

public class Women extends Clothing
public class Men extends Clothing
```



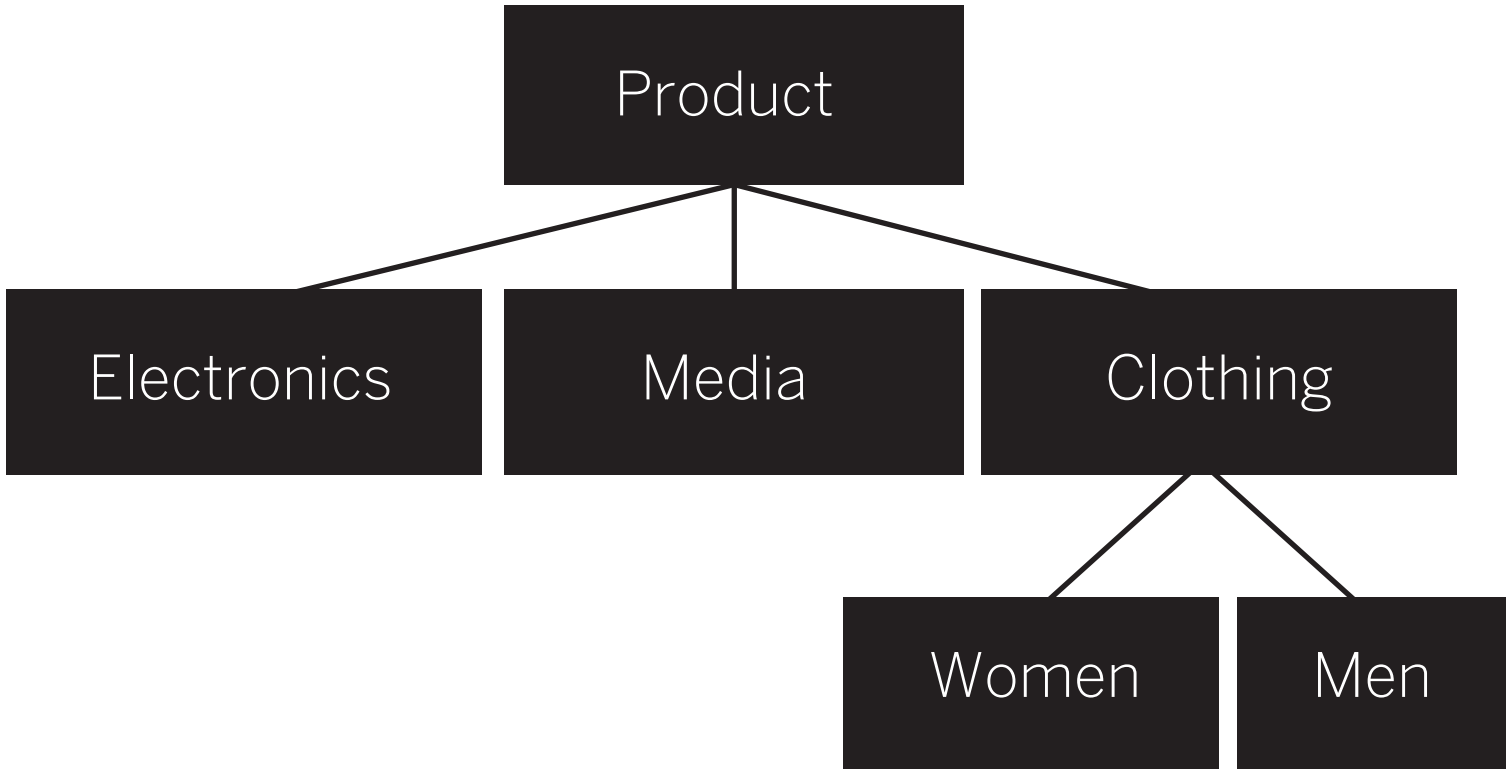
Which of the following do not cause an error:

```
Product p = new Product ();
Clothing c = new Women () ;
Clothing x = new Media () ;
Clothing a = new Product () ;
Product p = new Clothing () ;
```



Want to add a new class - **Books.**

Where should it go?



Want to add a new class - **Price.**

Where should it go?

```
Public class Clothing extends Product
{
      Public Clothing ()
      {
            System.out.print ("B");
      }
...
public class Women extends Clothing
{

    Public Women ()
    {
            System.out.println ( "A");
    }
//...
```

What is output by:

```
Women w = new Women (); ?
```

A. A
B.B
C. AB
D. BA
E. ABA