

```

public abstract class Shape implements Comparable
{
    private String myName;

    //constructor
    public Shape(String name)
    { myName = name; }

    public String getName()
    { return myName; }

    public abstract double area();
    public abstract double perimeter();

    public double semiPerimeter()
    { return perimeter() / 2; }

    public int compareTo(Object obj)
    {
        final double EPSILON = 1.0e-15;    //slightly bigger than
                                           //machine precision

        Shape rhs = (Shape) obj;
        double diff = area() - rhs.area();
        if (Math.abs(diff) <= EPSILON * Math.abs(area()))
            return 0; //area of this shape equals area of obj
        else if (diff < 0)
            return -1; //area of this shape less than area of obj
        else
            return 1; //area of this shape greater than area of obj
    }
}

```

Here is a program that finds the larger of two Comparable objects.

```

public class FindMaxTest
{
    /* Return the larger of two objects a and b. */
    public static Comparable max(Comparable a, Comparable b)
    {
        if (a.compareTo(b) > 0) //if a > b ...
            return a;
        else
            return b;
    }

    /* Test max on two Shape objects. */
    public static void main(String[] args)
    {
        Shape s1 = new Circle(3.0, "circle");
        Shape s2 = new Square(4.5, "square");
        System.out.println("Area of " + s1.getName() + " is " +
            s1.area());
        System.out.println("Area of " + s2.getName() + " is " +
            s2.area());
        Shape s3 = (Shape) max(s1, s2);
        System.out.println("The larger shape is the " +
            s3.getName());
    }
}

```

Here is the output:

```
Area of circle is 28.27
Area of square is 20.25
The larger shape is the circle
```