

```

public abstract class Figura {
    public abstract double perimetro();
    public abstract double superficie();
}
.....
public abstract class FiguraReg extends Figura{
    protected double radio;
    public FiguraReg(double r)
    {
        radio = r;
    }
    public abstract double perimetro();
    public abstract double superficie();
}
.....
public class Poligono extends FiguraReg {
    private double base;
    private double altura;
    private int numlado;

    public Poligono(double r, int nl)
    {
        super(r);
        base = 2*(Math.sin(Math.PI/nl)*r);
        altura = Math.cos(Math.PI/nl)*r;
        numlado = nl;
        //System.out.println("Poligono: base="+base+", alt="+altura);
    }

    public double perimetro() {

        return numlado*base;
    }

    public double superficie() {
        // TODO Auto-generated method stub
        return numlado * (base * altura / 2);
    }
}

```

```
.....  
public class Circulo extends FiguraReg {
```

```
    public Circulo(double r)  
    {  
        super(r);  
    }  
    public double perimetro() {  
        // TODO Auto-generated method stub  
        return Math.PI*radio*2;  
    }  
  
    public double superficie() {  
        // TODO Auto-generated method stub  
        return Math.PI*radio*radio;  
    }  
}
```

```
}
```

```
.....  
public class Elipse extends FiguraReg {
```

```
    private double radmen;  
    public Elipse(double ra, double rb)  
    {  
        super(ra);  
        radmen = rb;  
    }  
  
    public double perimetro()  
    {  
        return (2* Math.PI * Math.sqrt(0.5*((radio*radio)+(radmen*radmen))));  
    }  
  
    public double superficie()  
    {  
        return (Math.PI * radio * radmen);  
    }  
}
```

```
}
```

```
.....  
public class Pentagono extends Poligono {
```

```
    public Pentagono(double r)  
    {  
        super(r,5);  
    }  
}
```

```
}
```

```

.....
public class TriangEqui extends Poligono {
    public TriangEqui(double r)
    {
        super(r,3);
    }
}

```

```

.....
public class PruebaFiguras {

    Figura []fig;
    public void ejercita()
    {
        String quefig="";
        fig = new Figura[5];
        fig[0] = new Circulo(100.0);
        fig[1] = new Poligono(100.0,4);
        fig[2] = new Elipse(100.0, 90.0);
        fig[3] = new Pentagono(100.0);
        fig[4] = new TriangEqui(100.0);
        for (int i=0; i<5; i++)
        {
            switch (i) {
                case 0: quefig="Circulo: "; break;
                case 1: quefig = "Cuadrado: "; break;
                case 2: quefig = "Elipse: "; break;
                case 3: quefig = "Pentagono: "; break;
                case 4: quefig = "Triangulo equilátero: "; break;
            }
            System.out.print(quefig);
            System.out.print("perimetro = "+fig[i].perimetro()+" ");
            System.out.println("superficie = "+fig[i].superficie()+" ");
        }

    }

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        PruebaFiguras pf=new PruebaFiguras();
        pf.ejercita();
    }
}

```