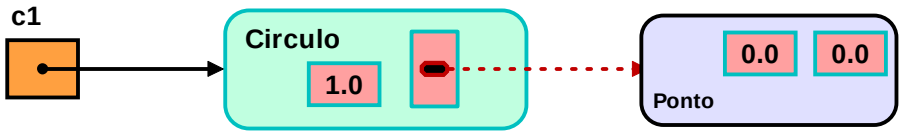
Classe Circulo:

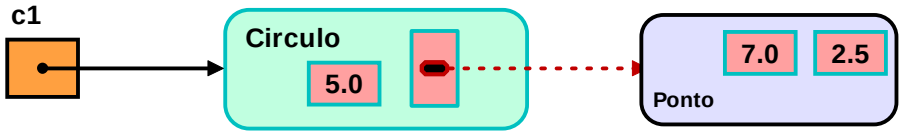
```
import static java.lang.Math.PI;
public class Circulo {
   // Variáveis de Instância
   private double raio;     // o raio do círculo
   private Ponto2D centro;  // ponto que define o centro do círculo

   // Construtores de circulos
   public Circulo() { raio = 1.0; centro = new Ponto2D(); }
```



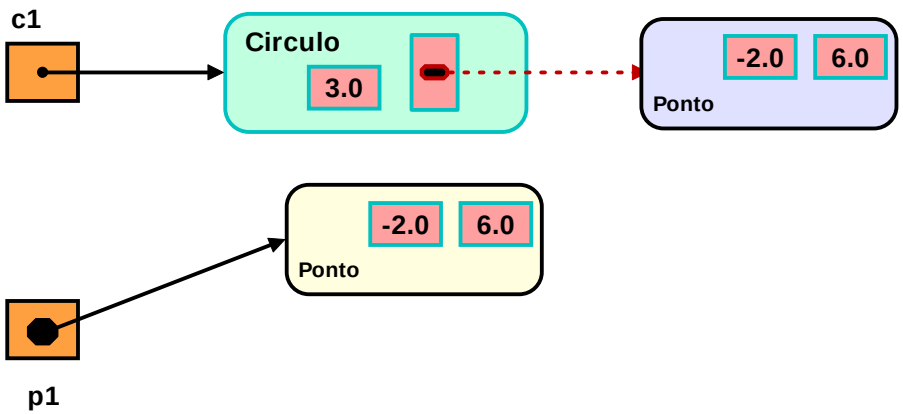

```
c1 = new Circulo();
```

```
   public Circulo(double r, double cx, double cy) {
       raio = r; centro = new Ponto2D(cx, cy);
   }
```



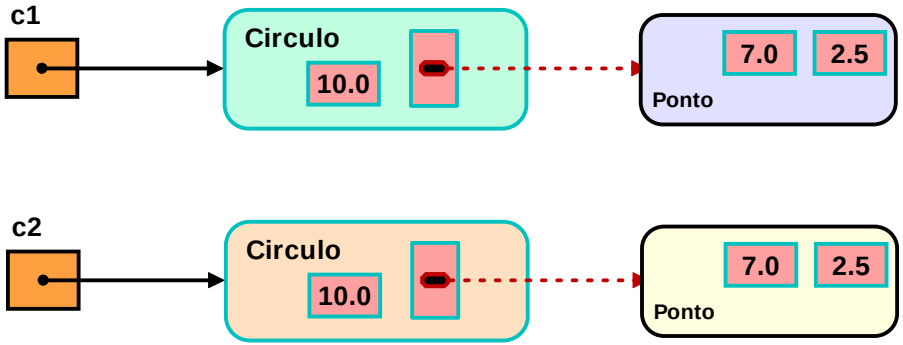

```
c1 = new Circulo(5.0, 7.0, 2.5);
```

```
public Circulo(double r, Ponto2D pc) {
    raio = r; centro = pc.clone();
 }
```



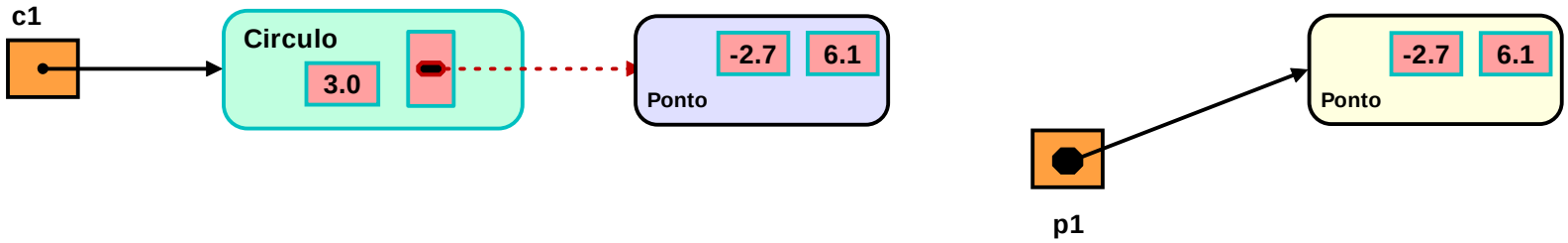

```
c1 = new Circulo(3.0, p1);
```

```
public Circulo(Circulo cp) {
   raio = cp.getRaio(); centro = cp.getCentro(); // getCentro() faz clone
}
```



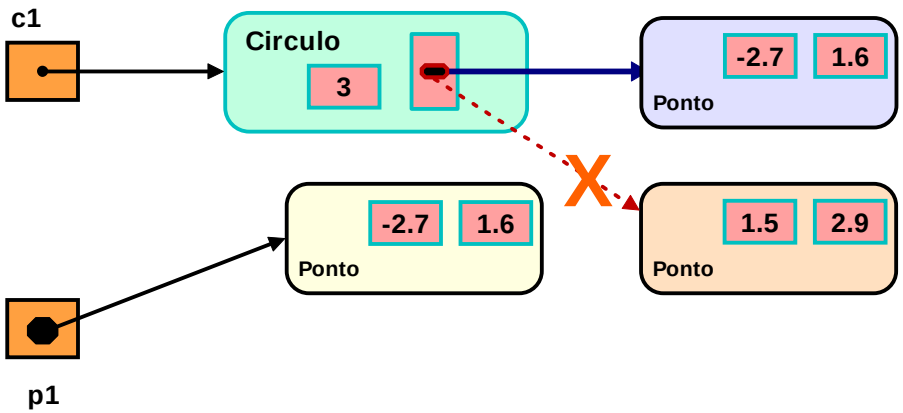

```
c2 = new Circulo(c1);
```

```
// Métodos de Instância
public double getRaio() { return raio; }
public Ponto2D getCentro() { return centro.clone(); }
```



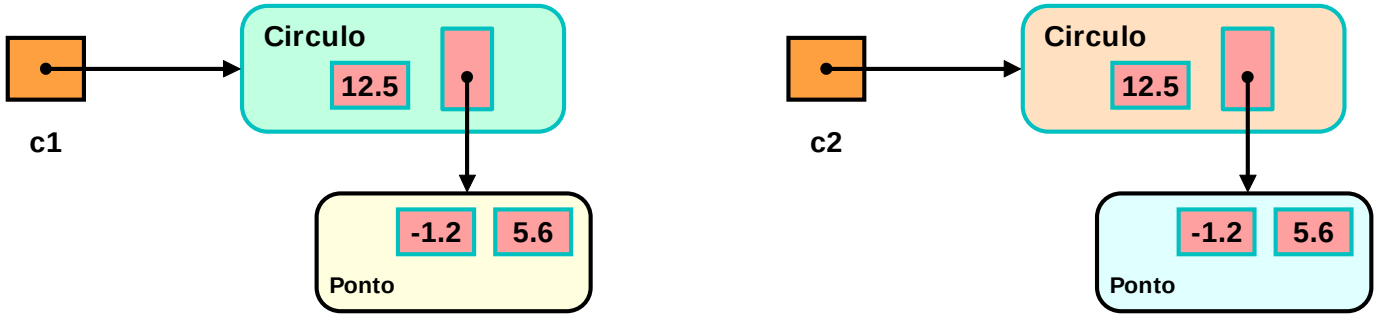

```
Ponto2D p1 = c1.getCentro();
```

```
public void mudaCentro(Ponto2D nc) { centro = nc.clone(); }
```



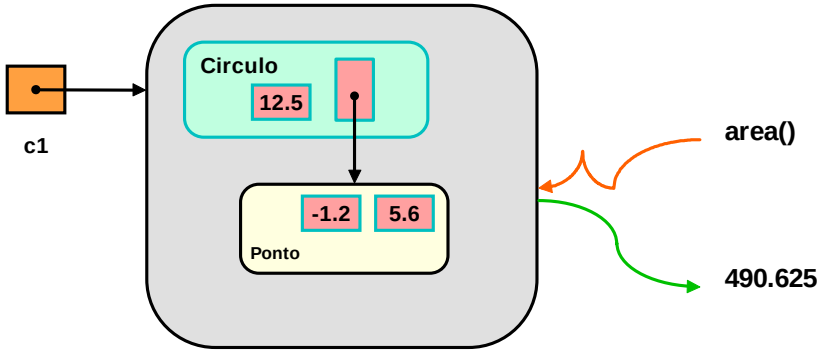

```
c1.mudaCentro(p1);
```

```
public Circulo clone() { return new Circulo(this); }
```



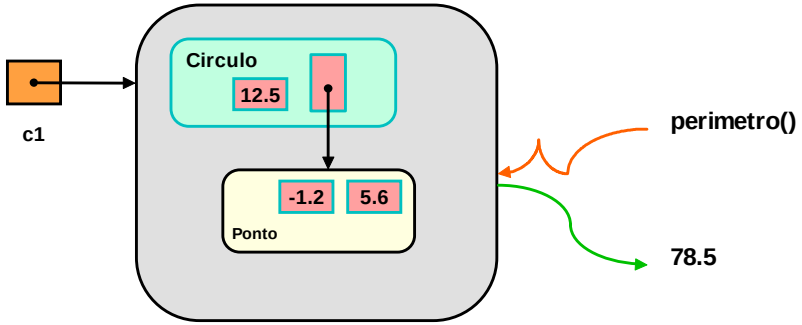

```
c2 = c1.clone();
```

```
public double area() { return PI*raio*raio; }
```



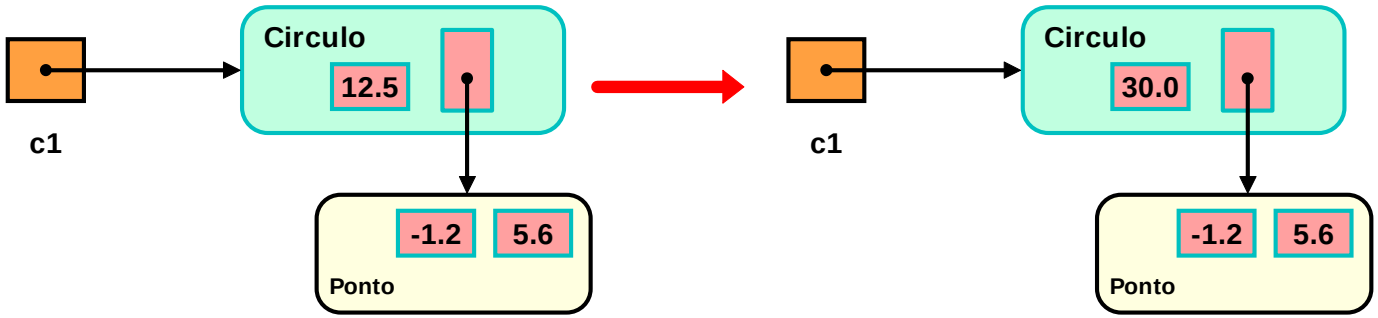

```
double area = c1.area();
```

```
public double perimetro() { return 2*PI*raio; }
```




```
double perim = c1.perimetro();
```

```
public void aumentaRaio(double rx) { raio += rx; }
```




```
c1.aumentaRaio(17.5);
```