Bilaga 1

```
import java.awt.Point;
import java.awt.Graphics;

public abstract class Shape {
    public abstract void draw(Graphics g);
    public abstract String toString();
}

public class Polygon extends Shape {
    protected Point [] corners;
    public void draw(Graphics g) {
           for (int i = 0; i < corners.length; i++) {
               int j = (i + 1) % corners.length;
               g.drawLine(corners[i].x, corners[i].y,
                           corners[j].x, corners[j].y);
           }
    }

    public String toString() {
           StringBuffer sb = new StringBuffer();
           sb.append('{');
           for (int i = 0; i < corners.length; i++) {
               if (0 < i) sb.append(',');
               sb.append(corners[i].toString());
           }
           sb.append('}');
           return sb.toString();
    }
}

public class Line extends Polygon {
    public Line(Point a, Point b) {
           corners = new Point[] {a, b};
    }
}

public class Triangle extends Polygon {
    public Triangle (Point a, Point b, Point c) {
           corners = new Point[] {a, b, c};
    }
}
```

```
public class Ellipse extends Shape {
    protected Point center;
    protected int radiusX, radiusY;
    public Ellipse(Point center, int radiusX, int radiusY) {
           this.center = center;
           this.radiusX = radiusX;
           this.radiusY = radiusY;
    }
    public void draw(Graphics g) {
           g.drawOval(center.x-radiusX, center.y-radiusY,
                      radiusX*2, radiusY*2);
    }
    public String toString() {
           return String.format("E:%s rx=%d ry=%d", center.toString(),
                                radiusX, radiusY);
    }
}

public class Circle extends Ellipse {
    public Circle(Point center, int radius) {
           super(center, radius, radius);
    }
    public String toString() {
           return String.format("C:%s r=%d", center.toString(), radiusX);
    }
}

// --------------------------------------------------------------------

public class Q9 {

    public static void main(String [] args) {
           Point a = new Point(0, 0);
           Point b = new Point(0, 10);
           Point c = new Point(10, 10);
           Shape [] shapes = new Shape[3];
           shapes[0] = new Line(a, b);
           shapes[1] = new Triangle(a, b, c);
           shapes[2] = new Circle(c, 5);
           for (Shape s : shapes) {
               System.out.println(s.toString());
           }
    }
}
```