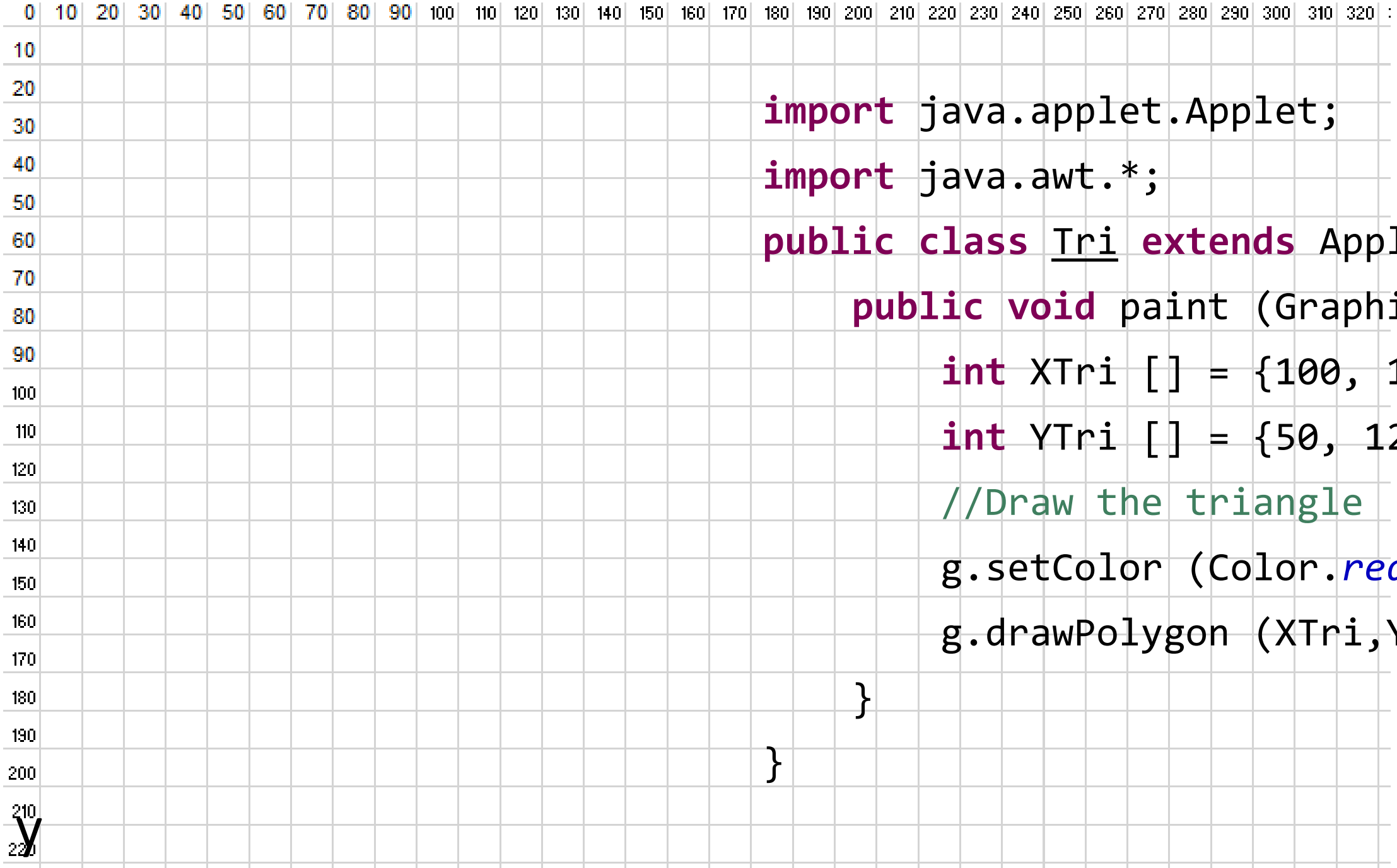
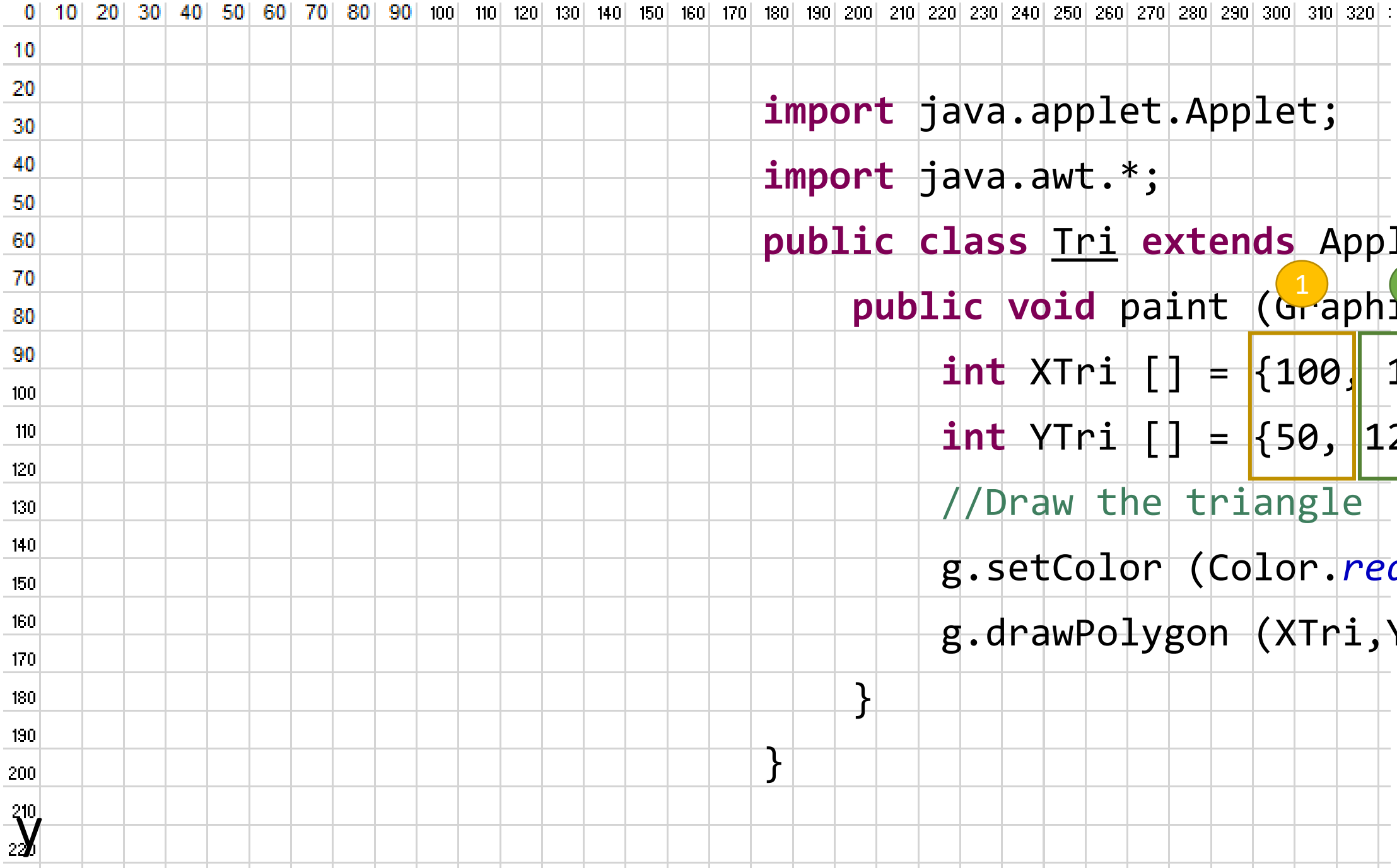
Polygons

Arrays!

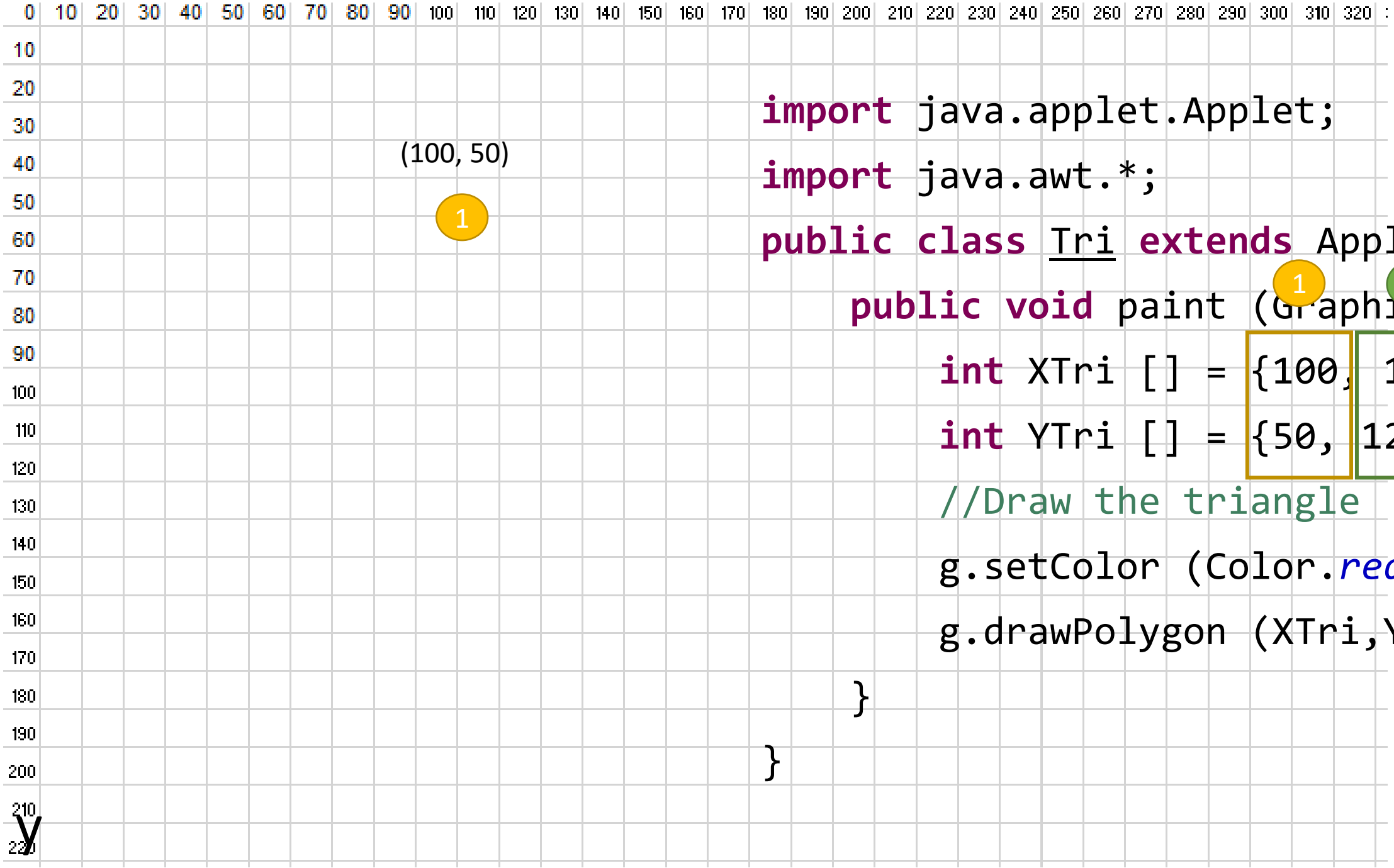



```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g){
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```



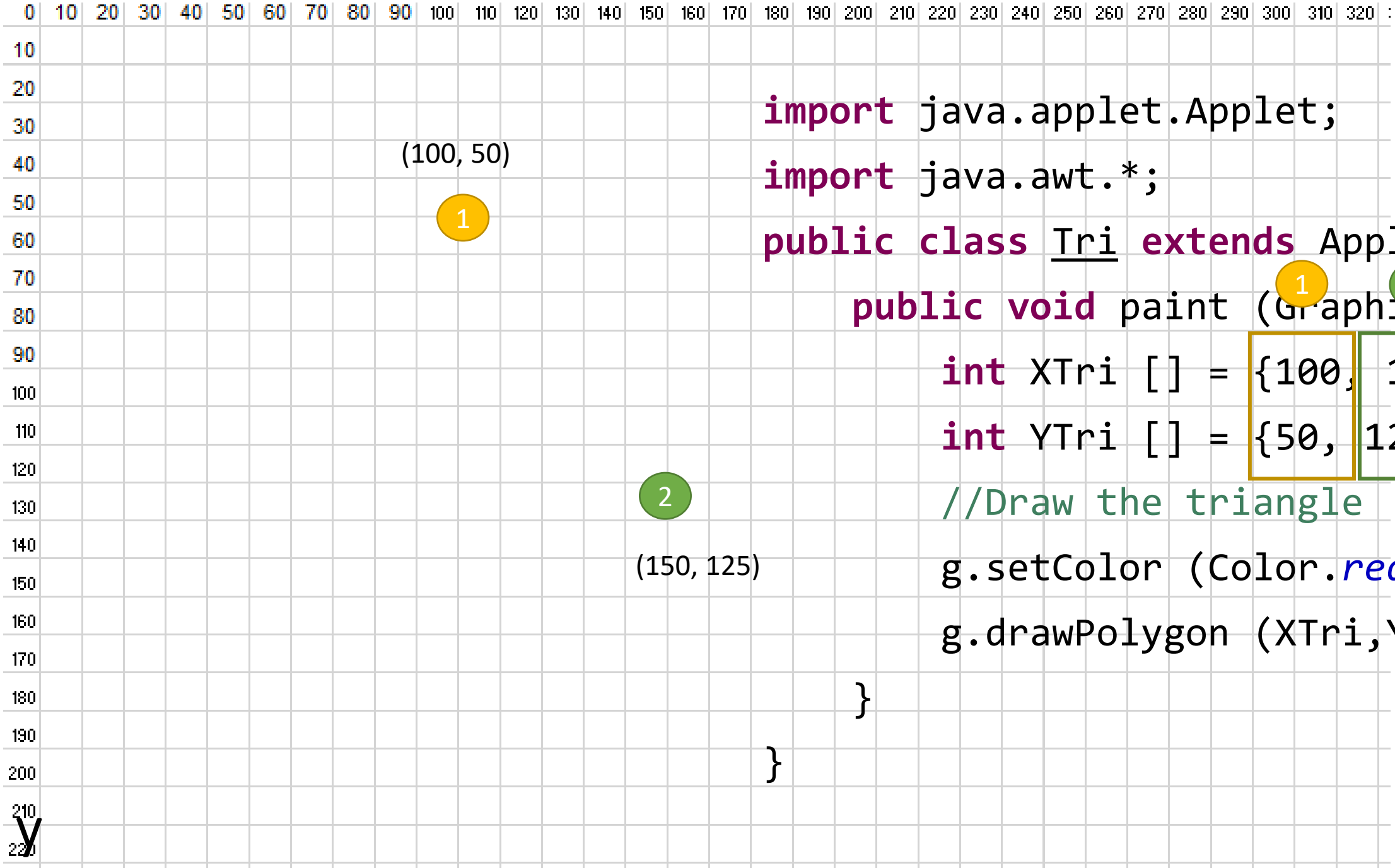

```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g) {
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```

1 2 3



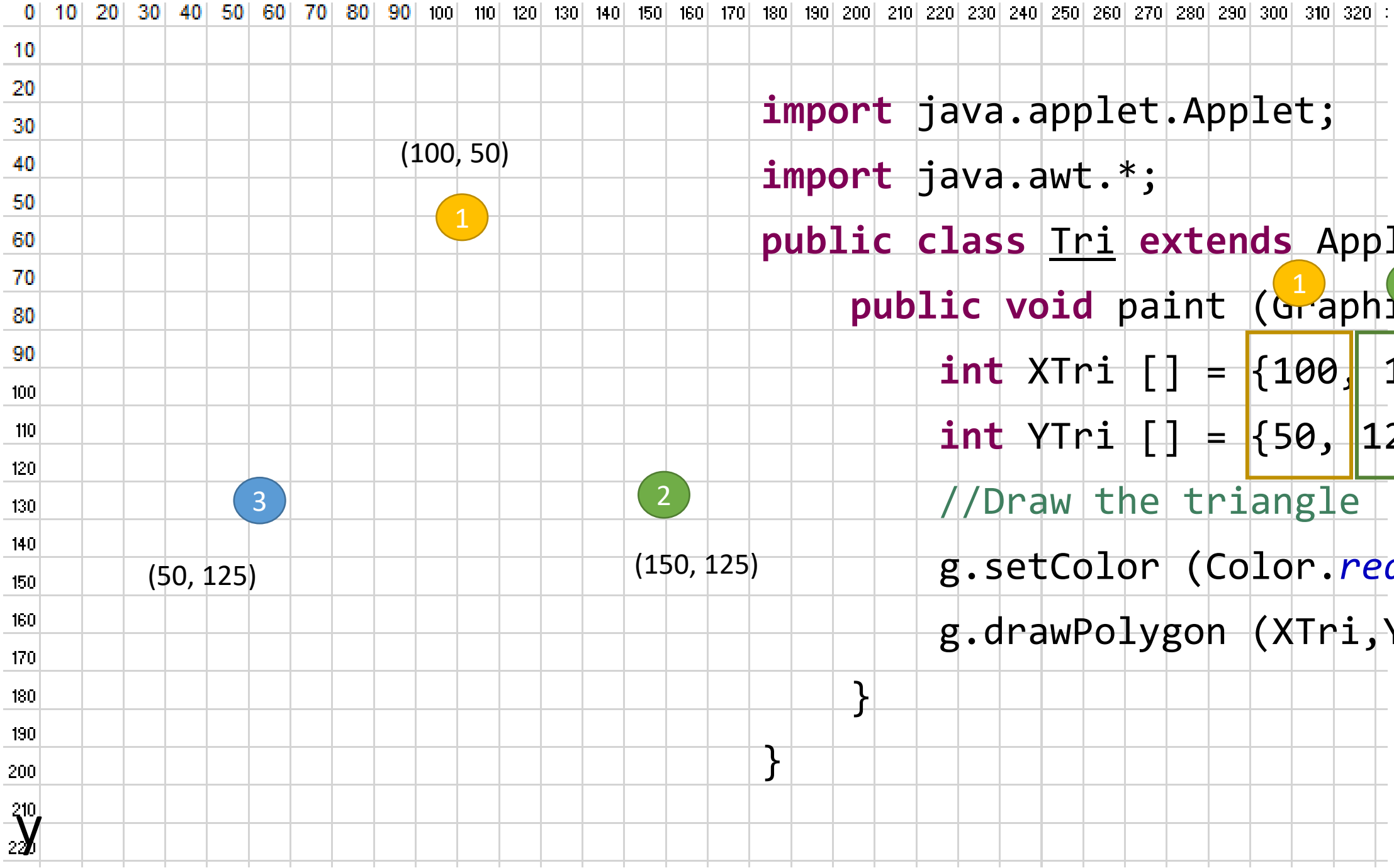

```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g) {
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```

1 2 3

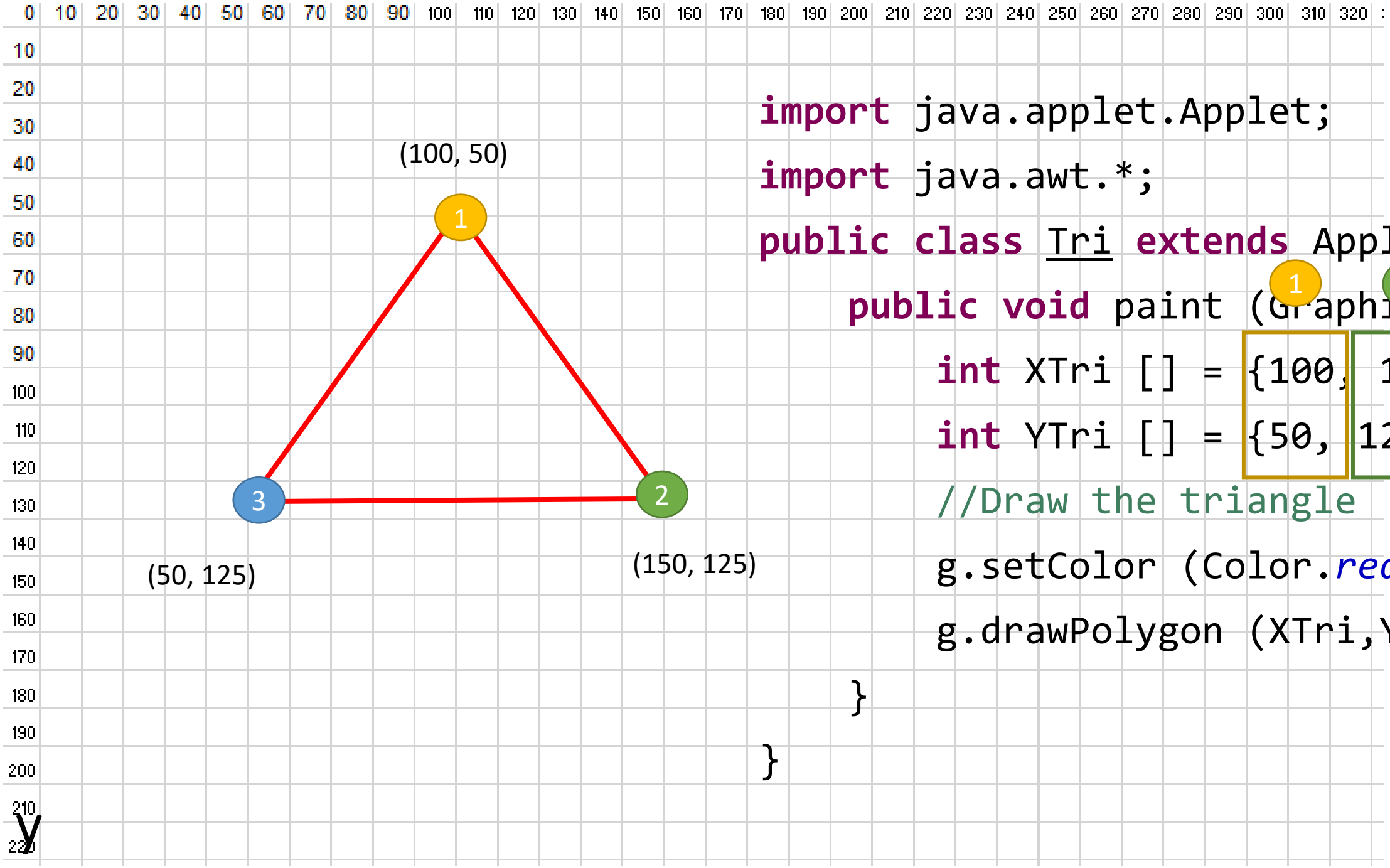



```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g) {
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```

1 2 3

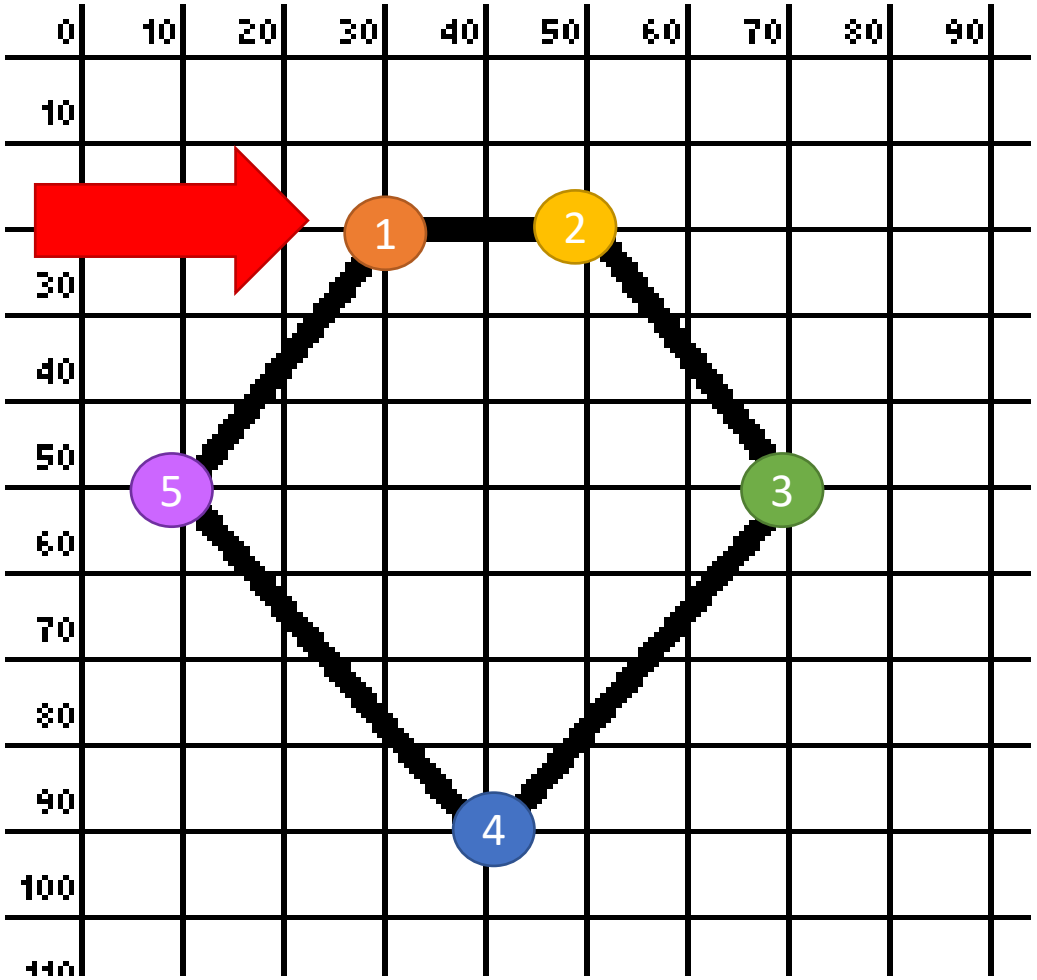



```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g) {
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```

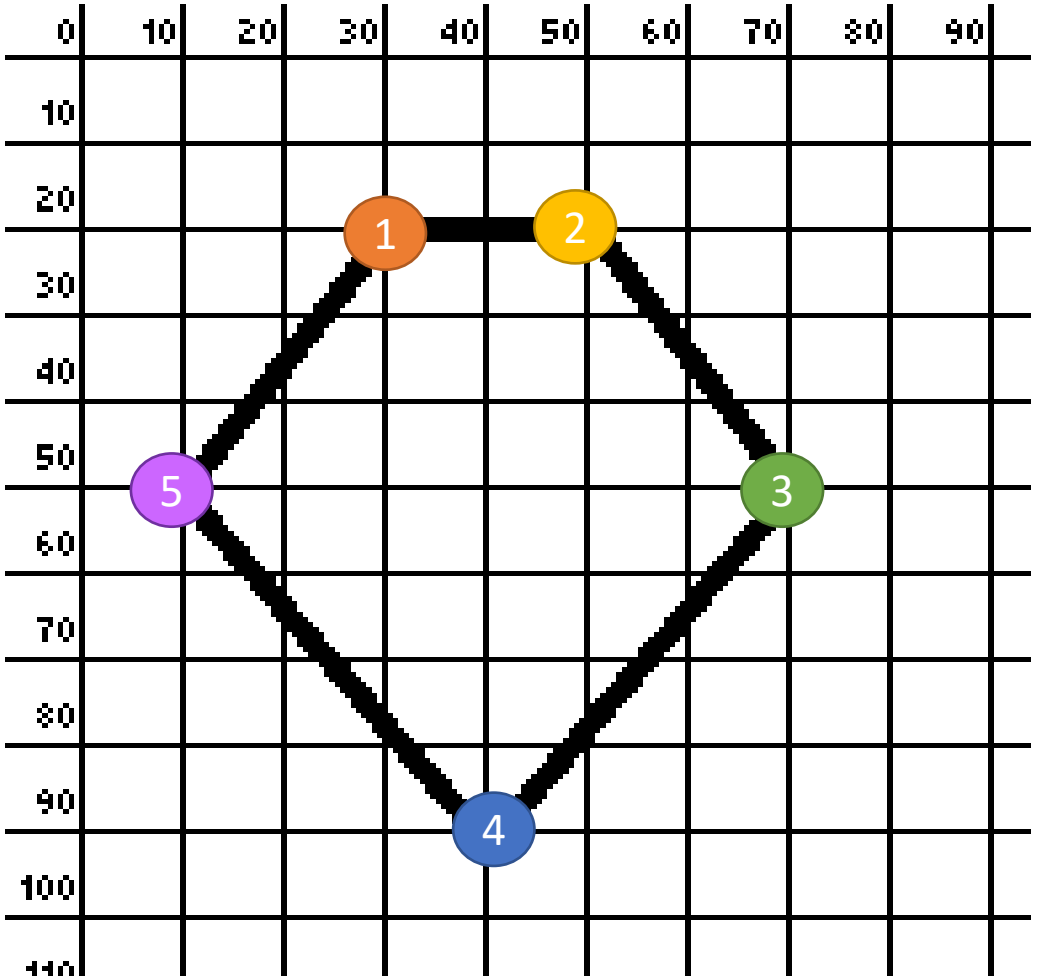



```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet{
    public void paint (Graphics g) {
        int XTri [] = {100, 150, 50};
        int YTri [] = {50, 125, 125};
        //Draw the triangle
        g.setColor (Color.red);
        g.drawPolygon (XTri,YTri,3);
    }
}
```

1 2 3

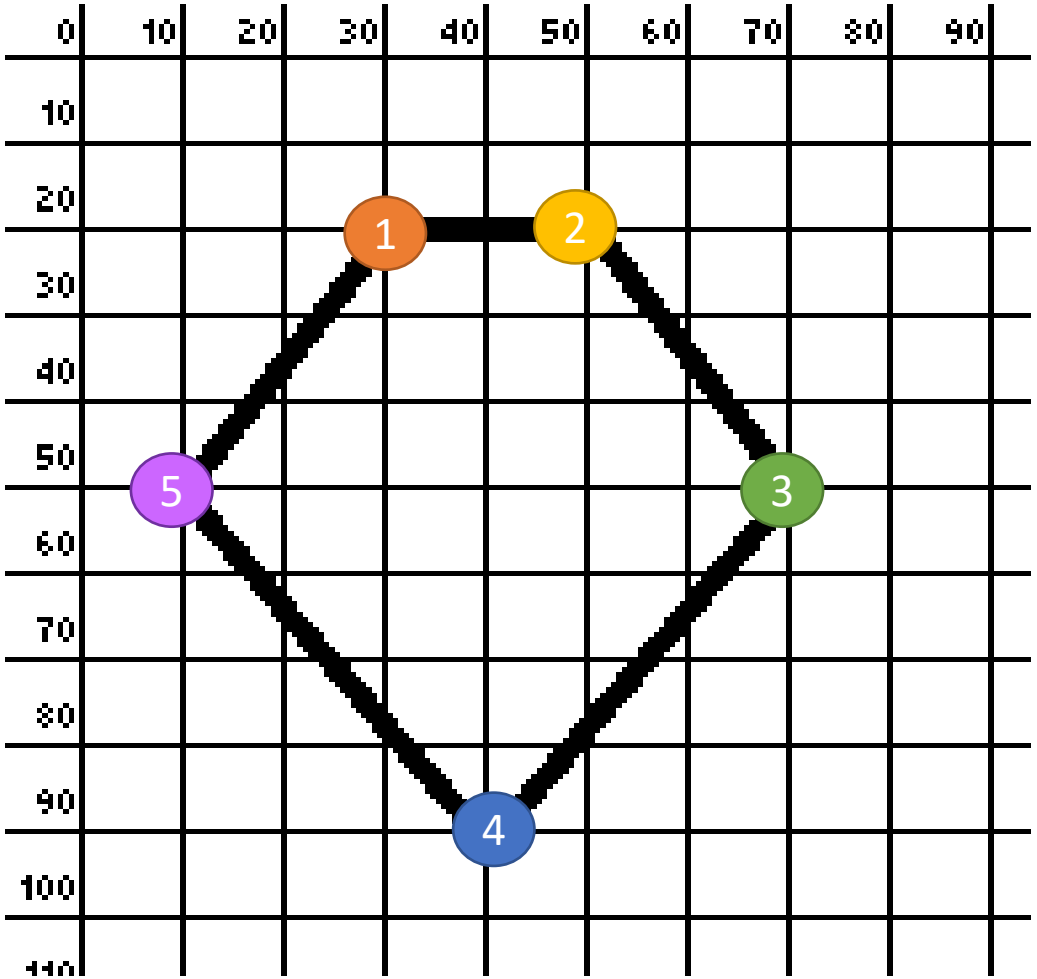


1. Pick a starting point.



2. Find the points.

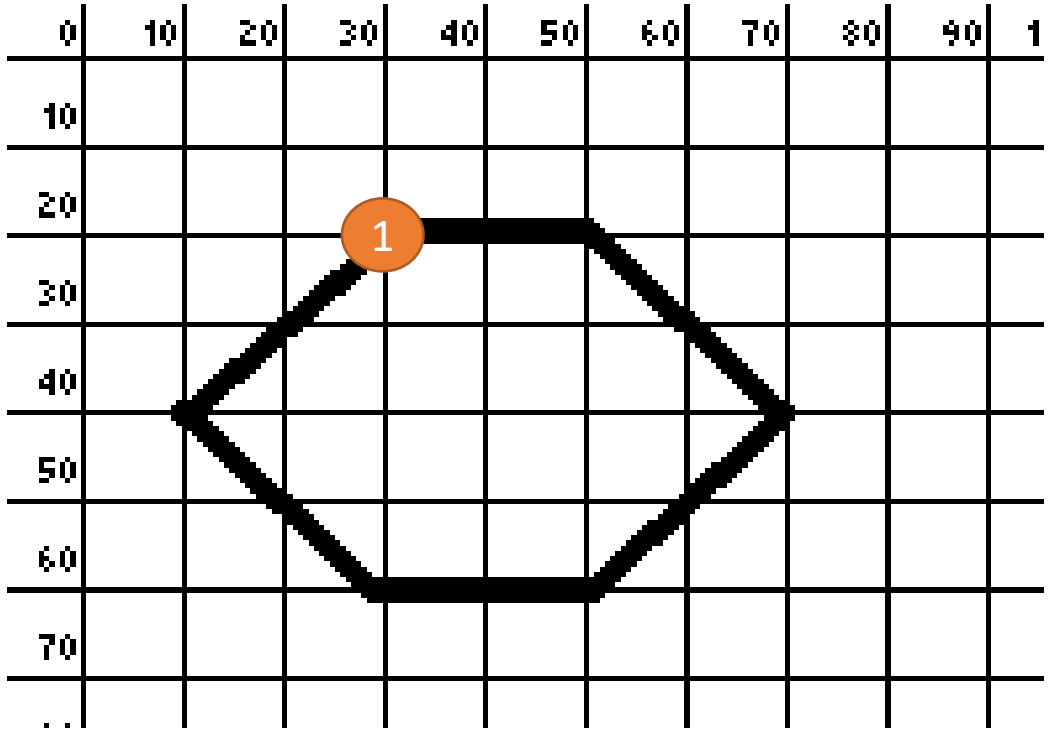
	1	2	3	4	5
X	30	50	70	40	10
y	20	20	50	90	50



3. Fill in the code.

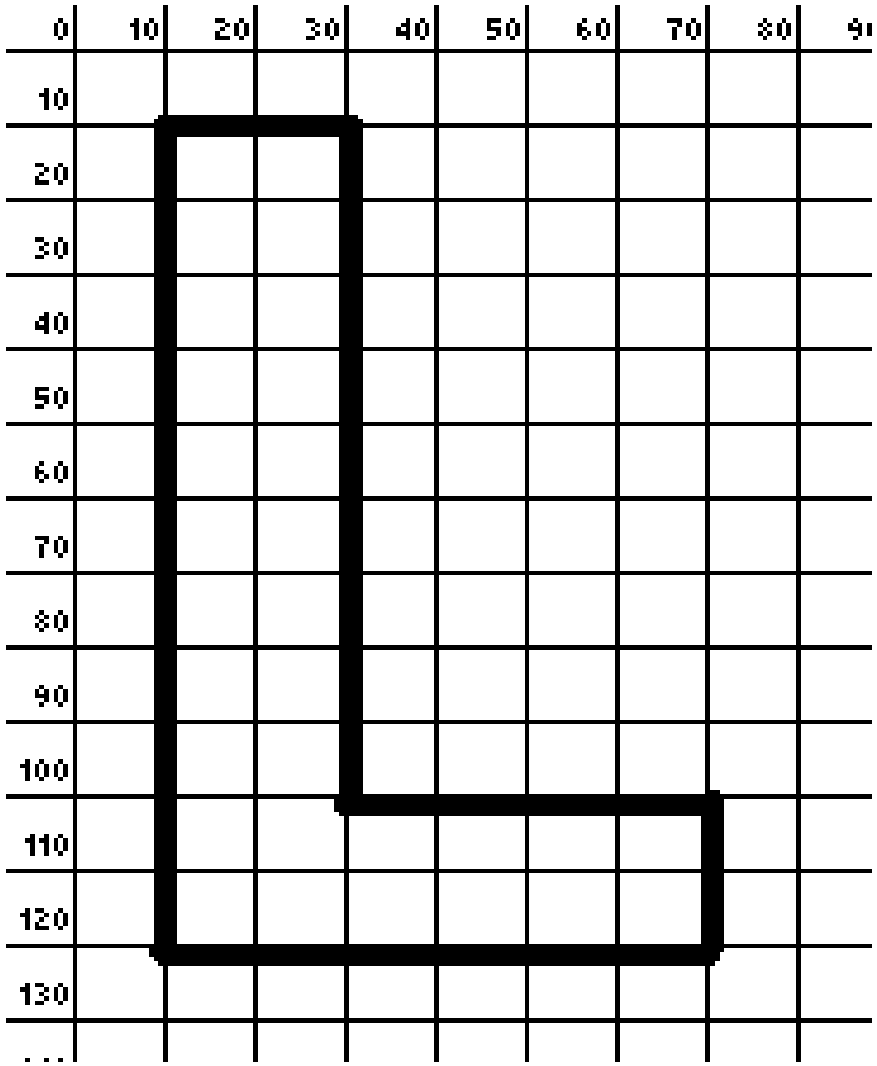
```
import java.applet.Applet;
import java.awt.*;
public class Tri extends Applet {
    public void pai(Graphics g) {
        int X [] = {30, 50, 70, 40, 10};
        int Y [] = {20, 20, 50, 90, 50};
        //Draw the polygon
        g.setColor (Color.black);
        g.drawPolygon (X,Y,X.length);
    }
}
```

1 2 3 4 5



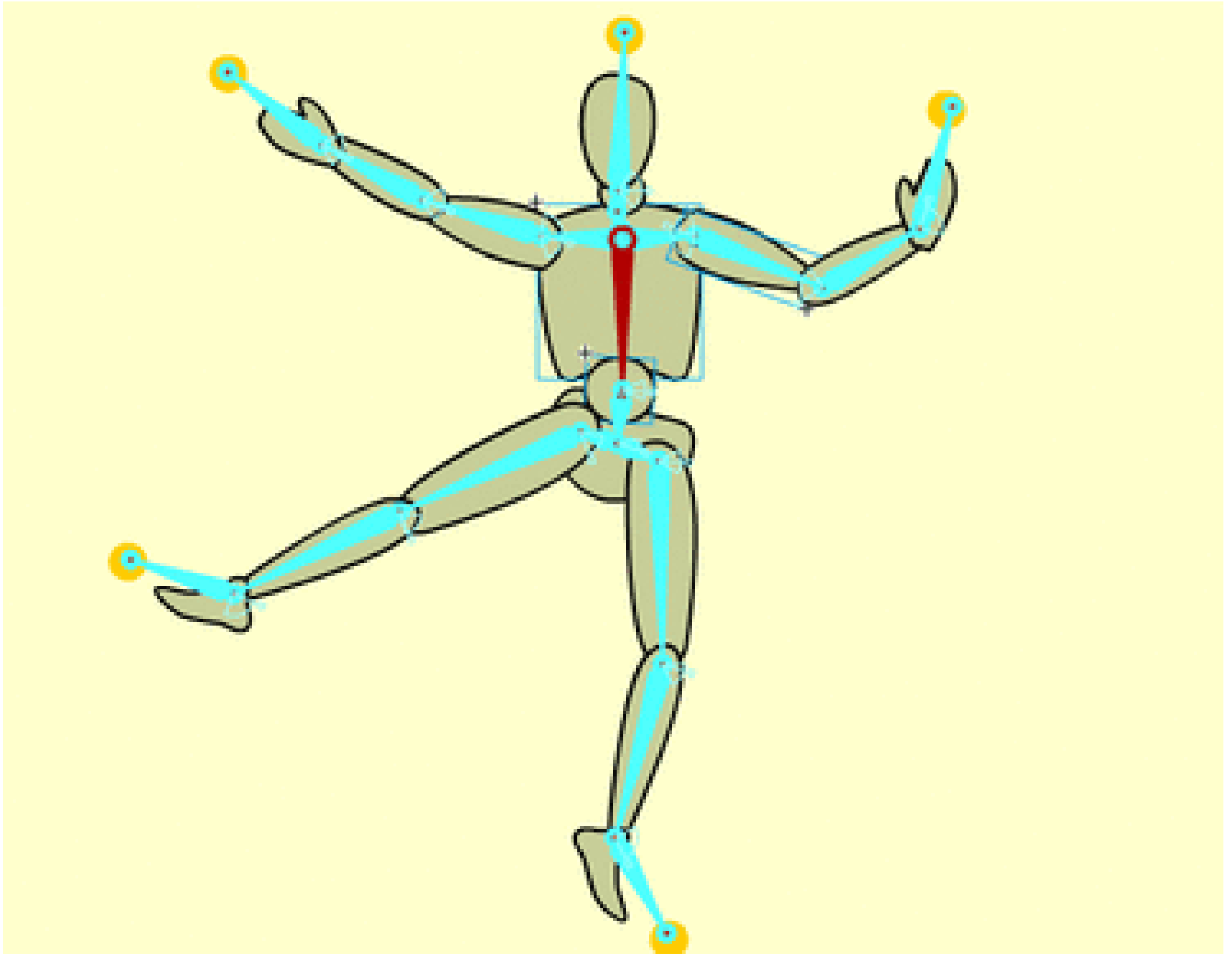
What will X.length be?

What is the co-ordinate of the first point?



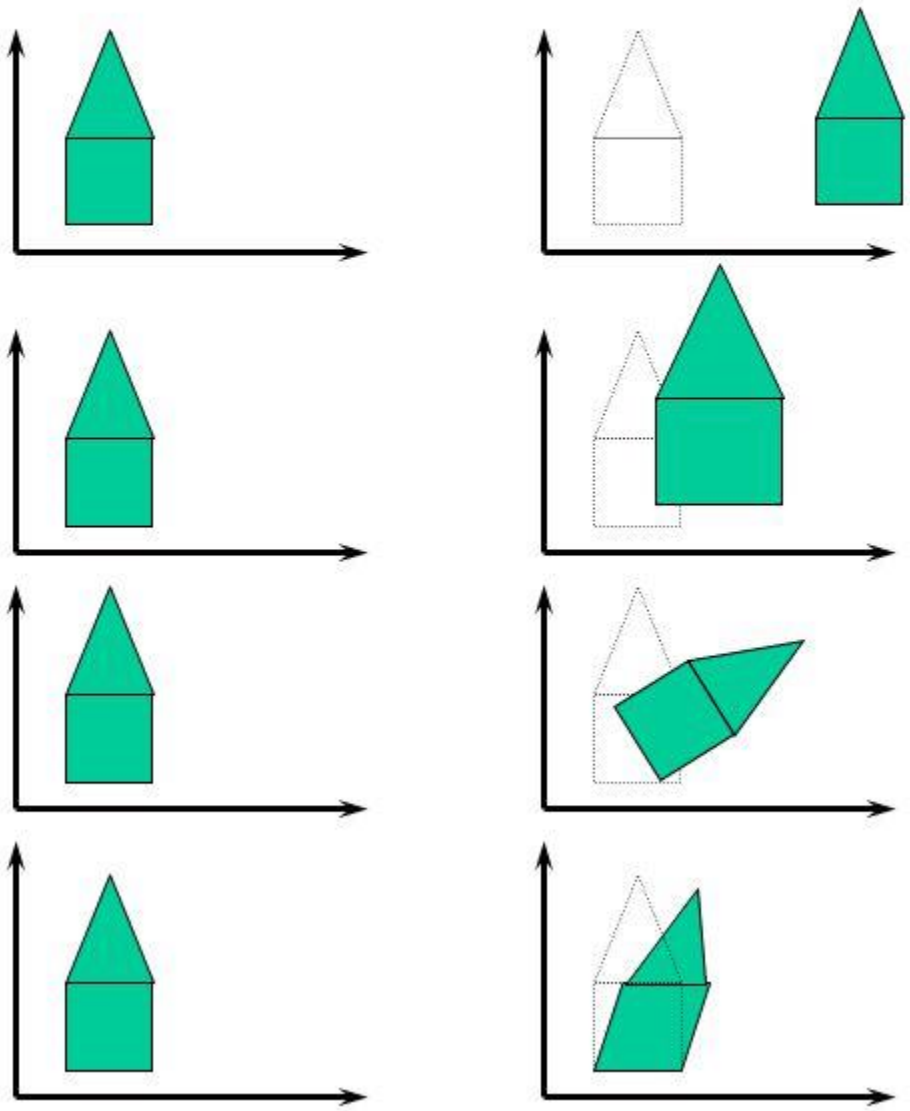
How many points in this polygon?

Does it matter where the starting point is?



2D Transformations

```
int X [] = {100, 150, 50};
int Y [] = {50, 125, 125};
```



- Translation
- Scale
- Rotation
- Deformation

Add to each value in X and/or Y

Multiply each value in X and/or Y

Use trig values on X and Y

Apply a function across on X and Y