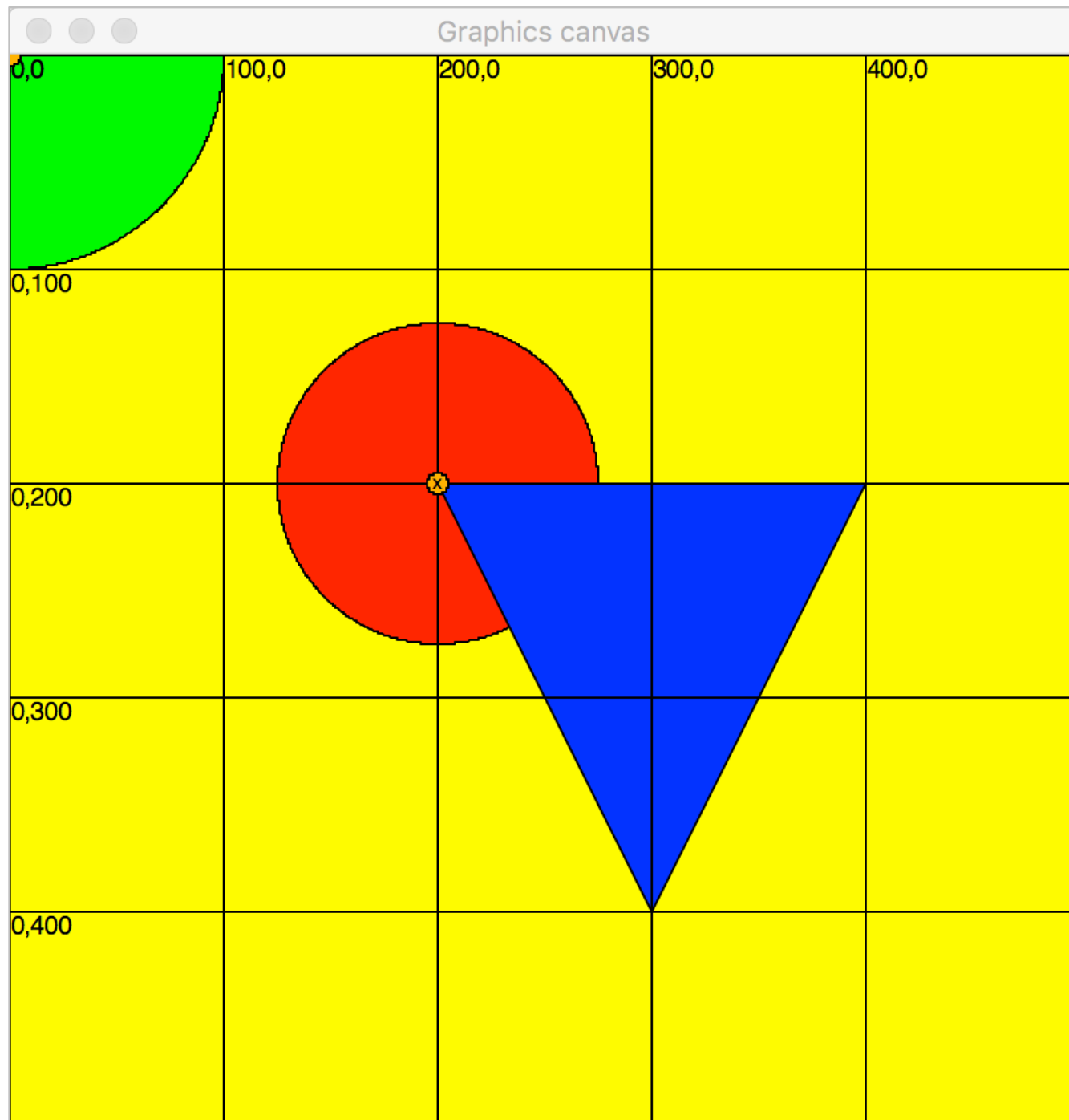


# Reference Points



The orange dot with the x in it marks the reference point of the toybox layer.

The toy box layer contains the red ball and blue cone.

The green ball is just a shape on the canvas; it is not in a layer.

```
4 # Reminder: reference points:
5 # Layer: 0,0
6 # Polygon: First point of the polygon
7 # Square: Center
8 # Rectangle: Center
9 # Circle: Center
10
11 paper = Canvas(500,500,'yellow')
12
13 # Create a green ball (circle), place it on the canvas
14 # Note the reference point is the center of the circle
15 # And it's placed at the 0,0 point on the canvas
16 greenBall = Circle(100, Point(0,0))
17 greenBall.setFillColor('green')
18 paper.add(greenBall)
19
20 # Now create a layer called "toybox"...
21 # The reference point of a layer is 0,0
22 toolbox = Layer()
23
24 # Move the layer over to 200,200
25 # The reference point is still 0,0 of the layer
26 # But it's moved with the layer over to 200,200
27 # (You'll see this marked as a small orange dot with an x.)
28 toolbox.moveTo(200,200)
29
30 # And the layer to the canvas
31 paper.add(toolbox)
32
33 # Now lets add some shapes to the layer...
34
35 # Start with a red ball
36 # Once again, the reference point of this circle is the center of the circle
37 # It's placed at the 0,0 reference point of the layer,
38 # Which is currently moved to 200,200
39 redBall = Circle(75, Point(0,0))
40 redBall.setFillColor('red')
41 toolbox.add(redBall)
42
43 # Now lets add a polygon to the toybox layer
44 cone = Polygon(Point(0,0), Point(200,0), Point(100,200))
45 cone.setFillColor('blue')
46 toolbox.add(cone)
47 # Note how the first point in the polygon (Point(0,0))
48 # is placed relative to the 0,0 reference point to the toybox layer
49
```