Start with the 'o'

Some ways to draw an 'o'
with FontForge

- creating and using guidelines.
- using the ellipse tool
- reshaping bezier curves.
- adding and removing points from curves.
- looking at path directions and counters.
- the optics of letter shapes.

Using guidelines is never a bad idea :)

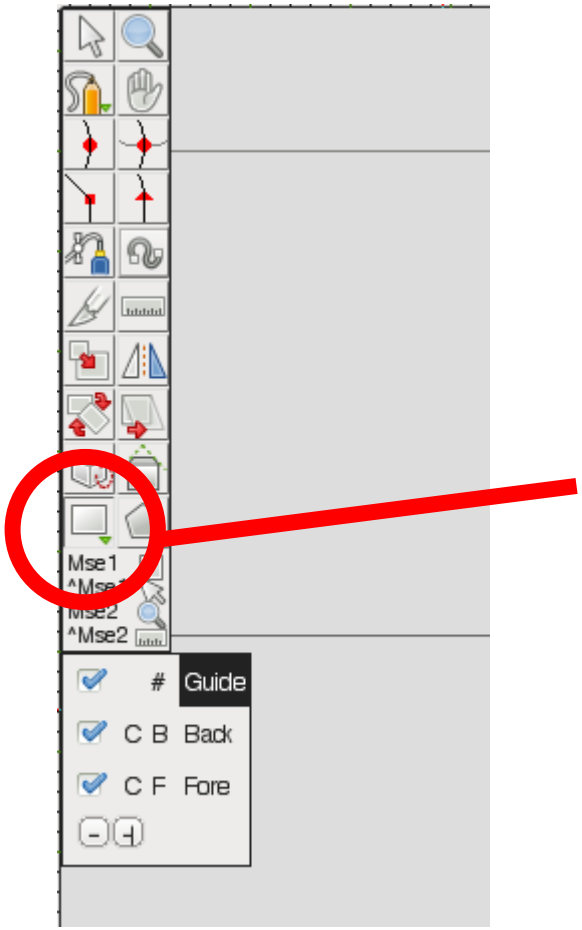
Guidelines in FontForge are created by a 'click and drag' from the rulers in a glyph edit window.

When you create guidelines FontForge automatically places them in the 'guide' layer.

To edit, move or delete a guideline, go to the guide layer select the guideline and edit or delete it from there.

The ellipse tool

The ellipse tool simply draws circular objects made of bezier curves.



The ellipse tool is accessed from the shape tool in FontForge's tool pallette

Double clicking the shape tool icon allows you to set it's options;

- whether to draw a rectangle or ellipse.

- whether the shape is drawn from it's centre of from it's bounding box.

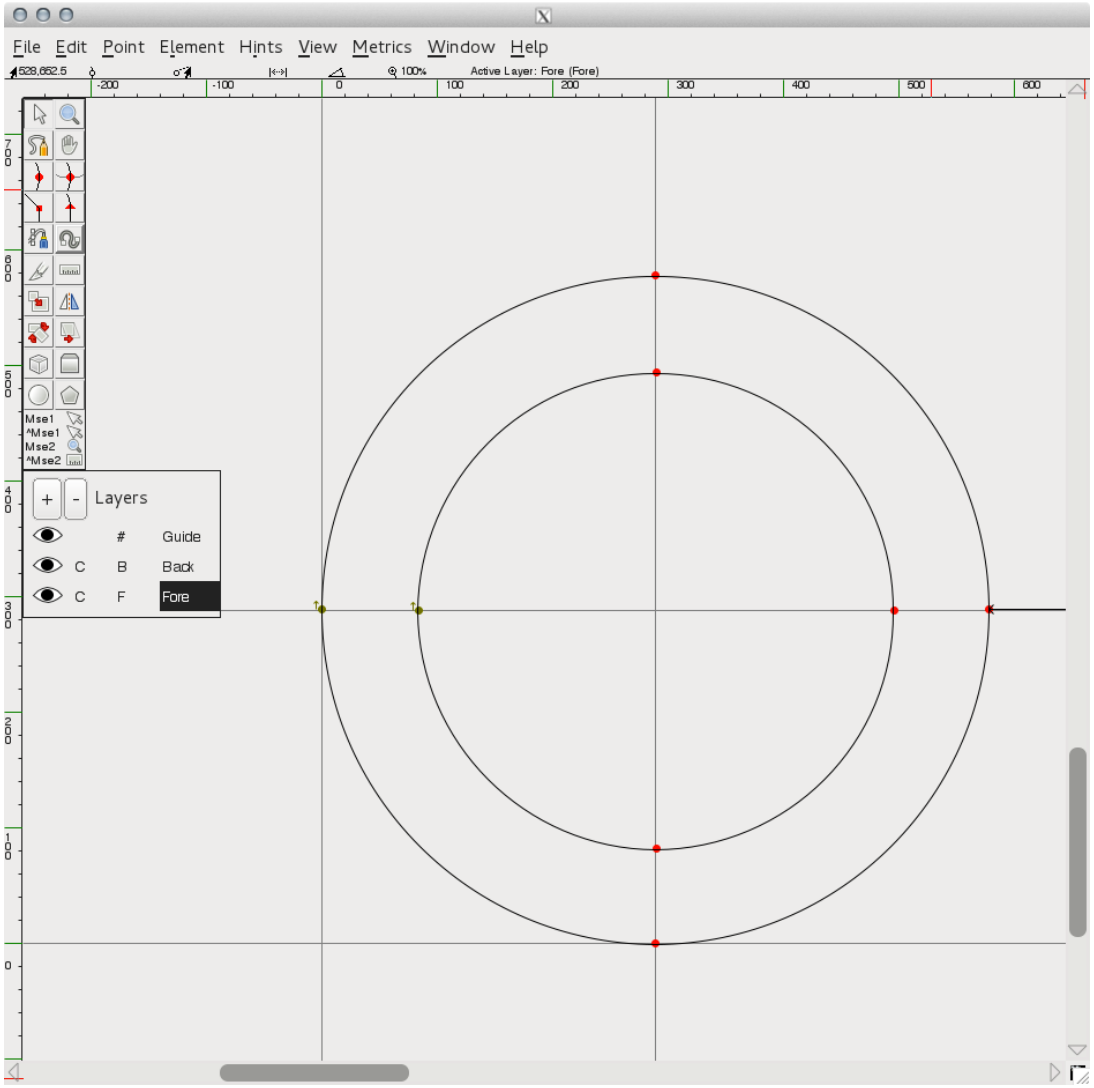
Using the centre of your guidelines as the locus draw a circle.

ps! shift key + drag = draws a constrained ellipse

Then draw another circle from the centre out.

Then draw another circle from the centre out.

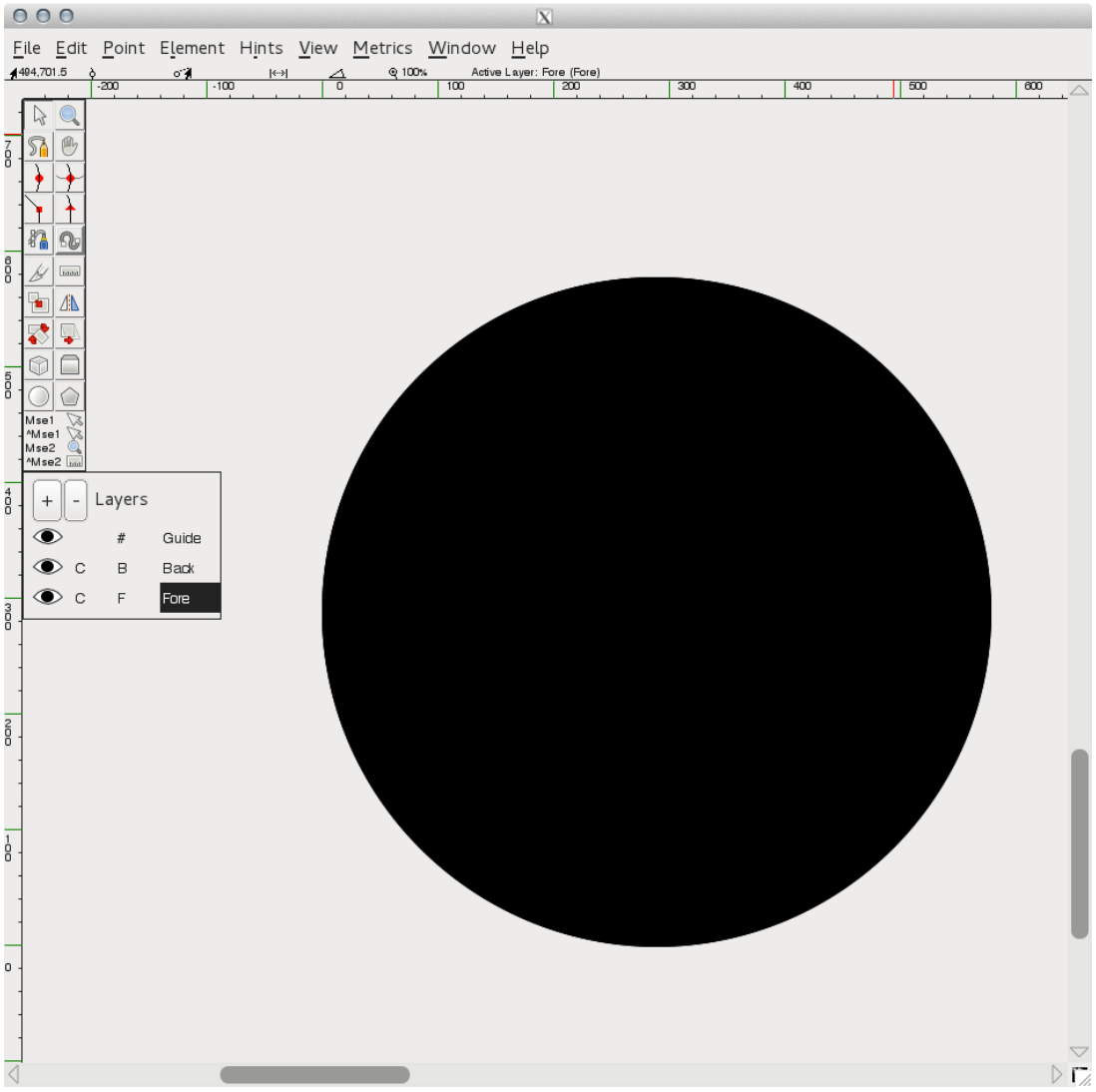
You know have 2 circles, one inside the other.


File Edit Point Element Hints View Metrics Window Help
528,852.5
100%
Active Layer: Fore (Fore)
Mse1
^Mse1
Mse2
^Mse2
Layers
Guide
C B Back
C F Fore

Use the keystroke

ctrl ~

to preview what you have drawn in the glyph window.


File Edit Point Element Hints View Metrics Window Help
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Layers
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Guide
C
B
Back
C
F
Fore

You now need to *'knock out'* the inner circle by ensuring that the paths of the circles are running in the correct and opposite directions.

The outer ellipse needs to run *clockwise* and the inner circle needs to run *counter-clockwise*.

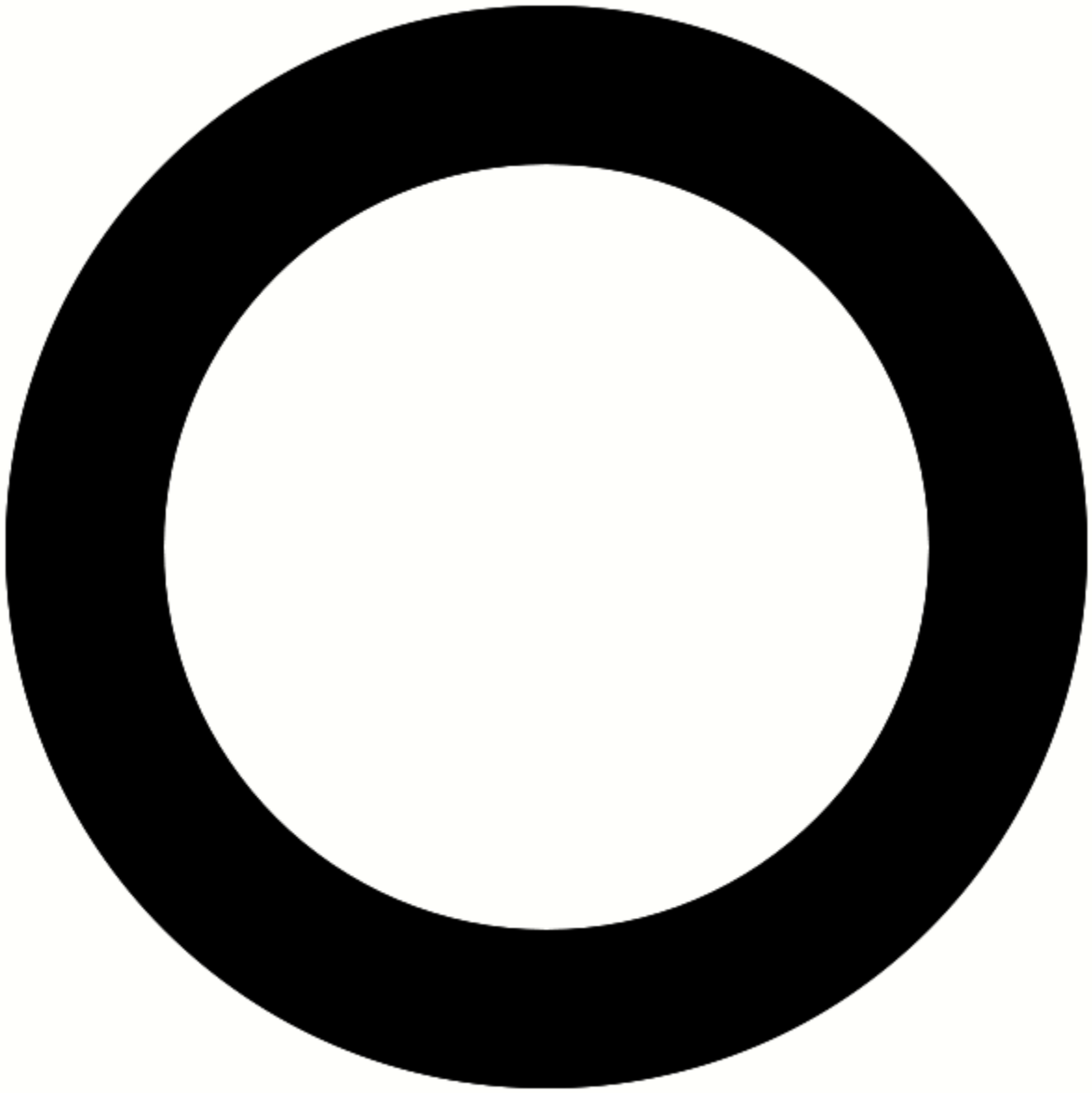
FontForge can do this for you; Use the Element menu, select 'Correct Direction'.

You now have an 'o'

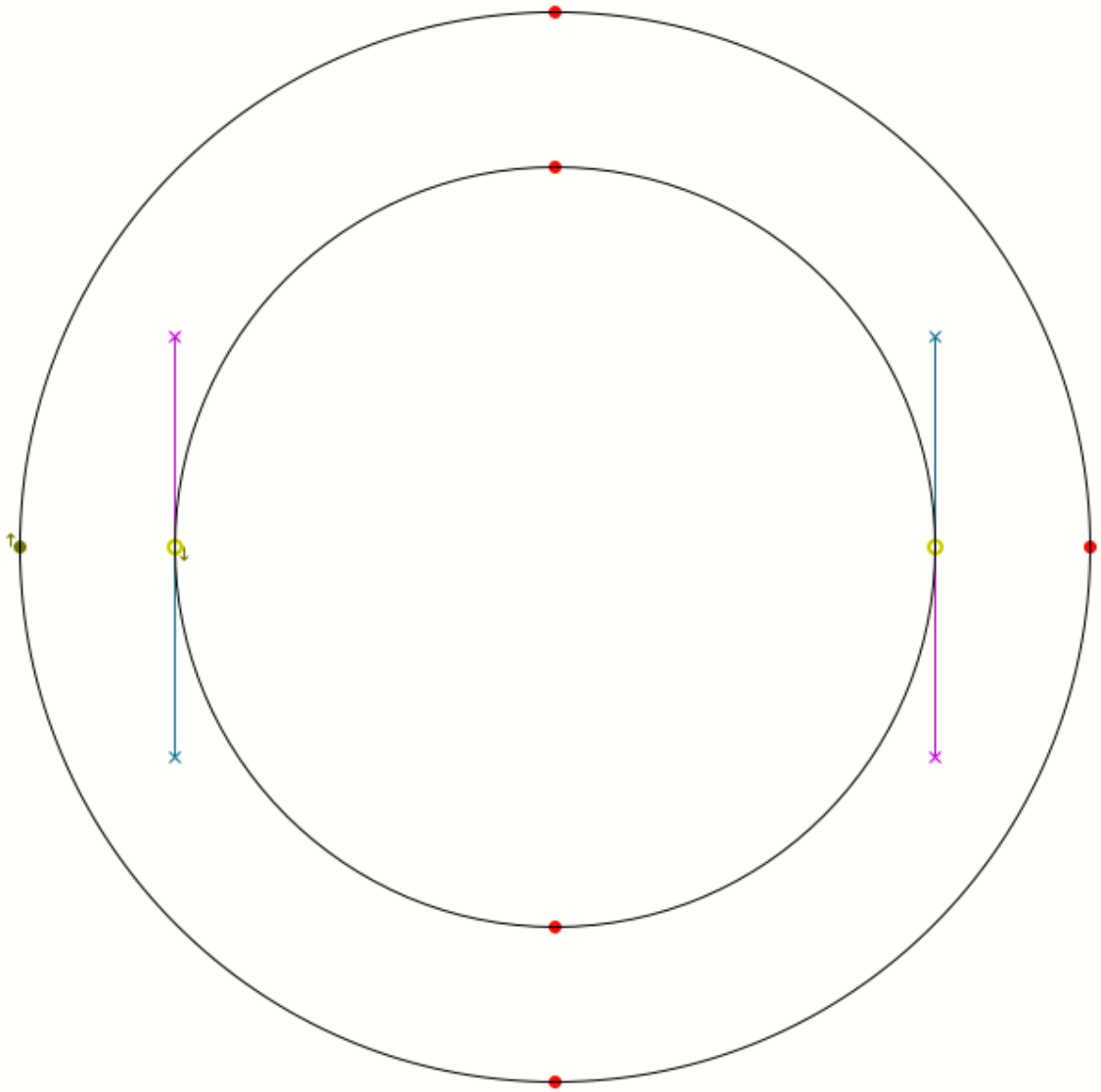
but does it look right?

Or does it look wrong?

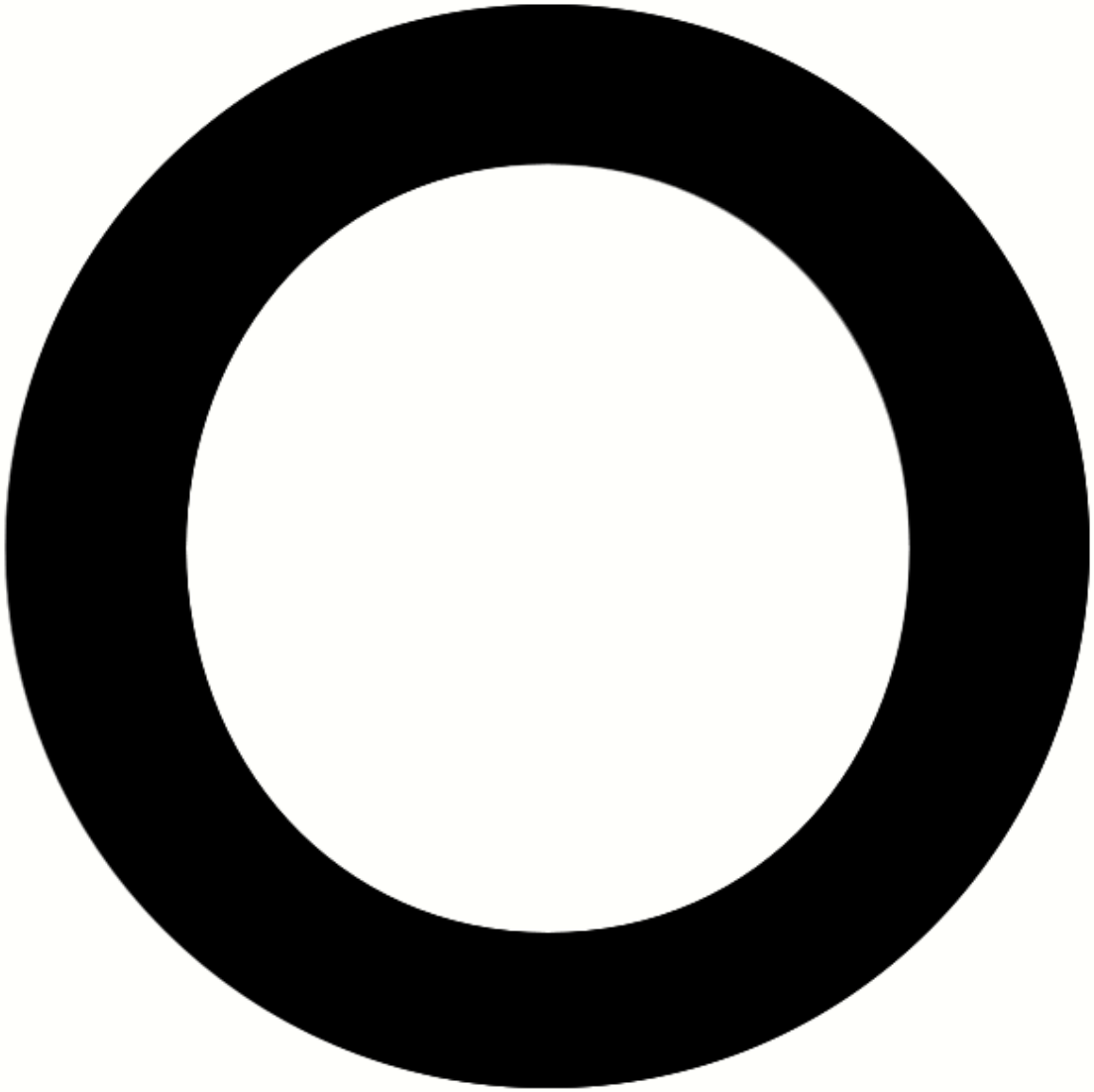
Trust your eyes!



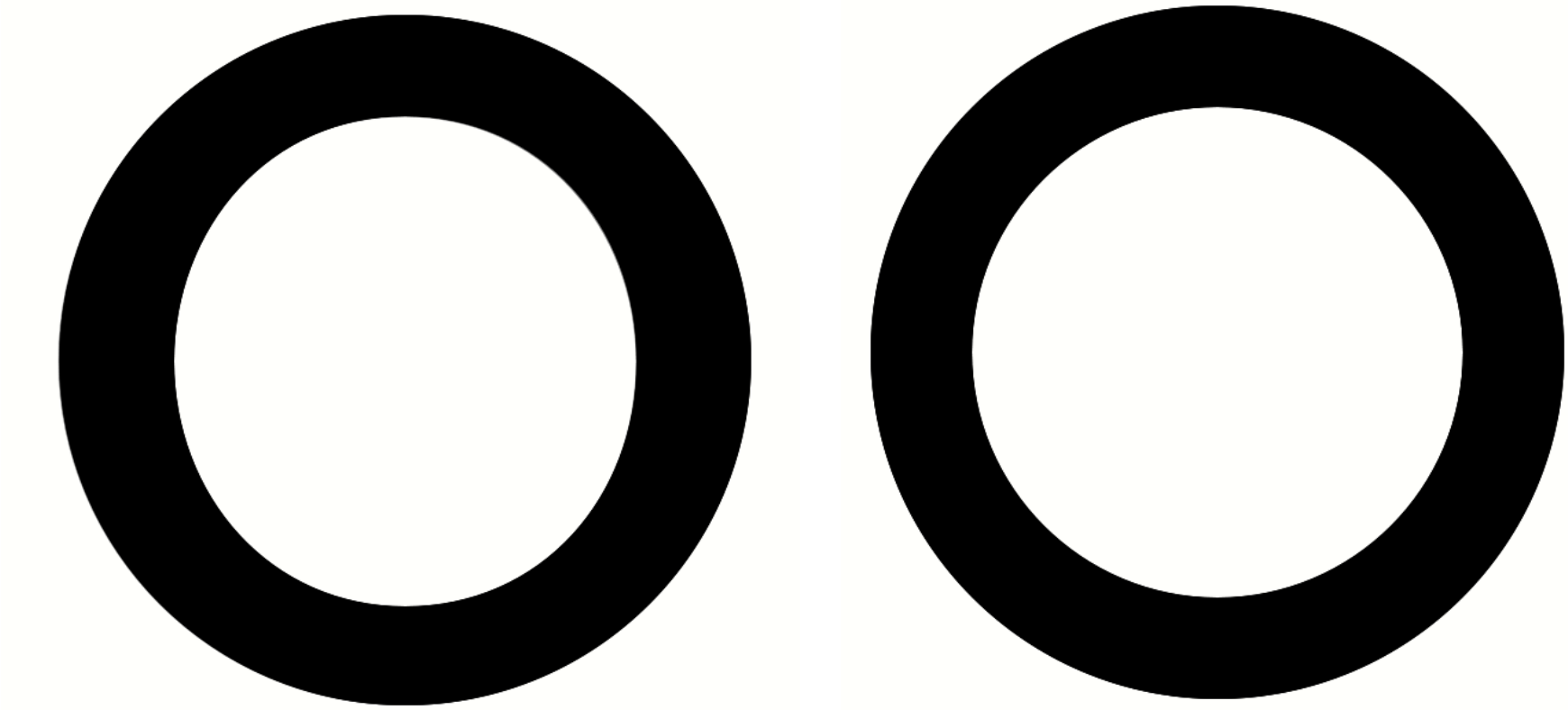
by selecting and moving points we can increase the width of the left and right side of the 'o'



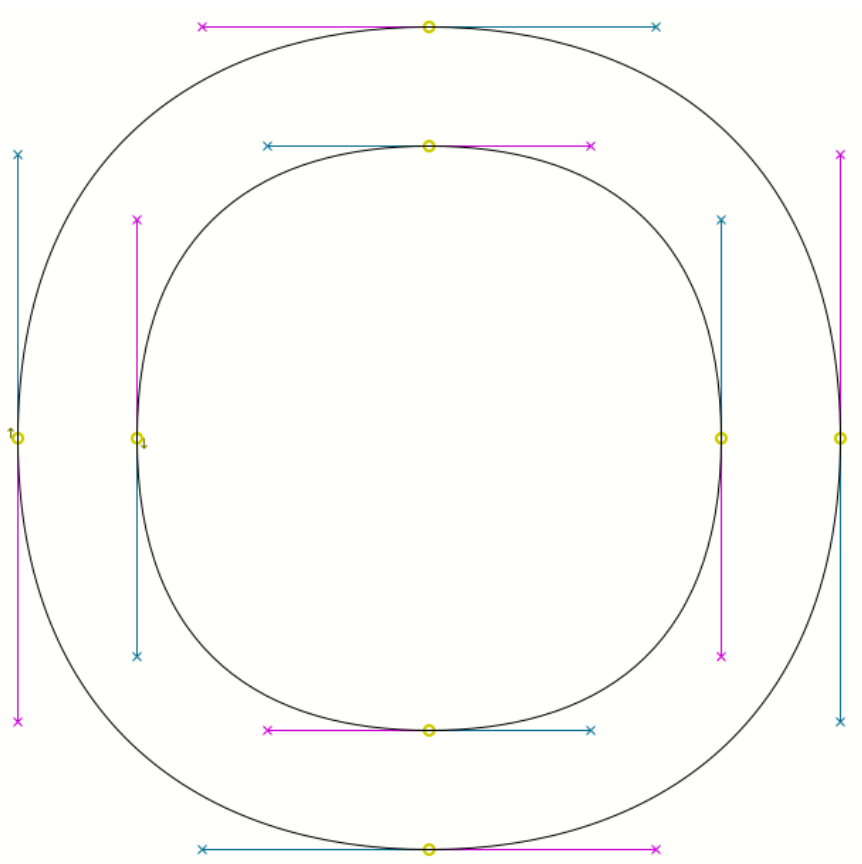
the result is a character that optically is more balanced. The left and right sides of the 'o' now 'look' the same size as the top and bottom.

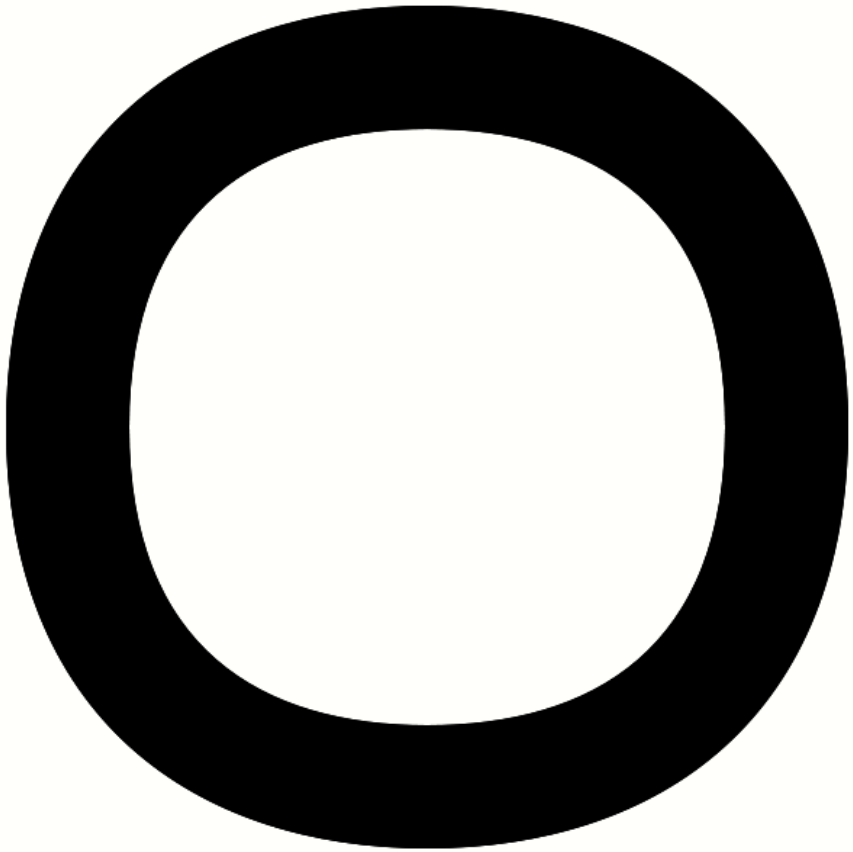


Compare them side by side.
"Trust your eyes".

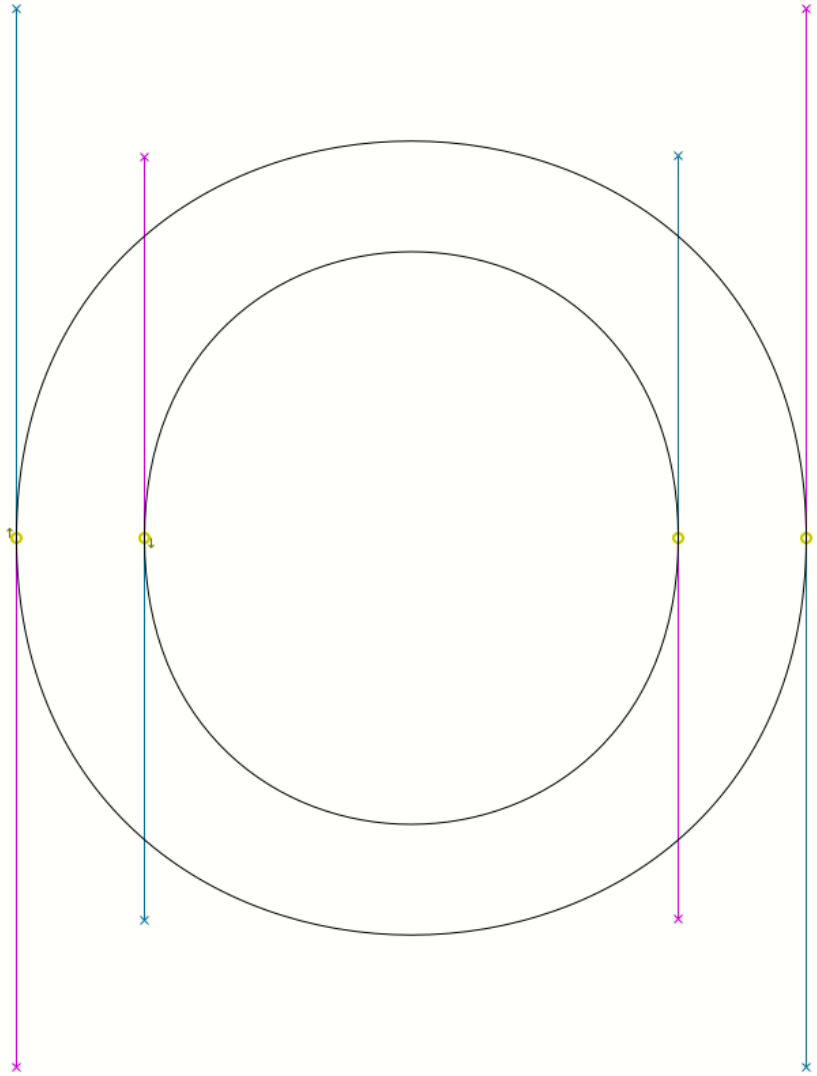


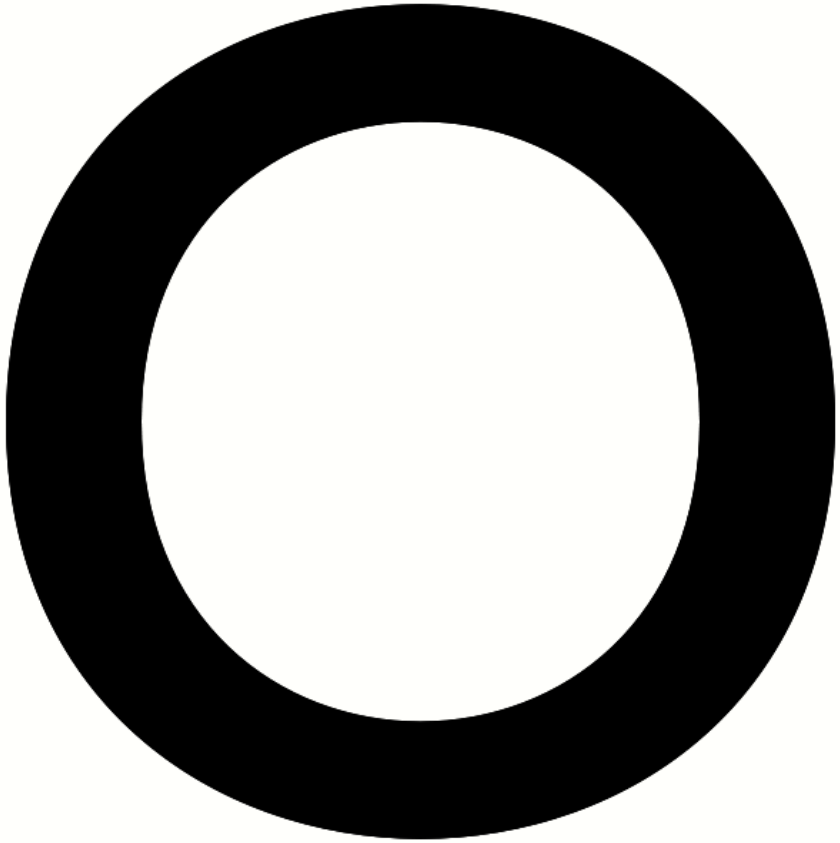
from here we can push and pull points and bezier handles to create different 'o' characters



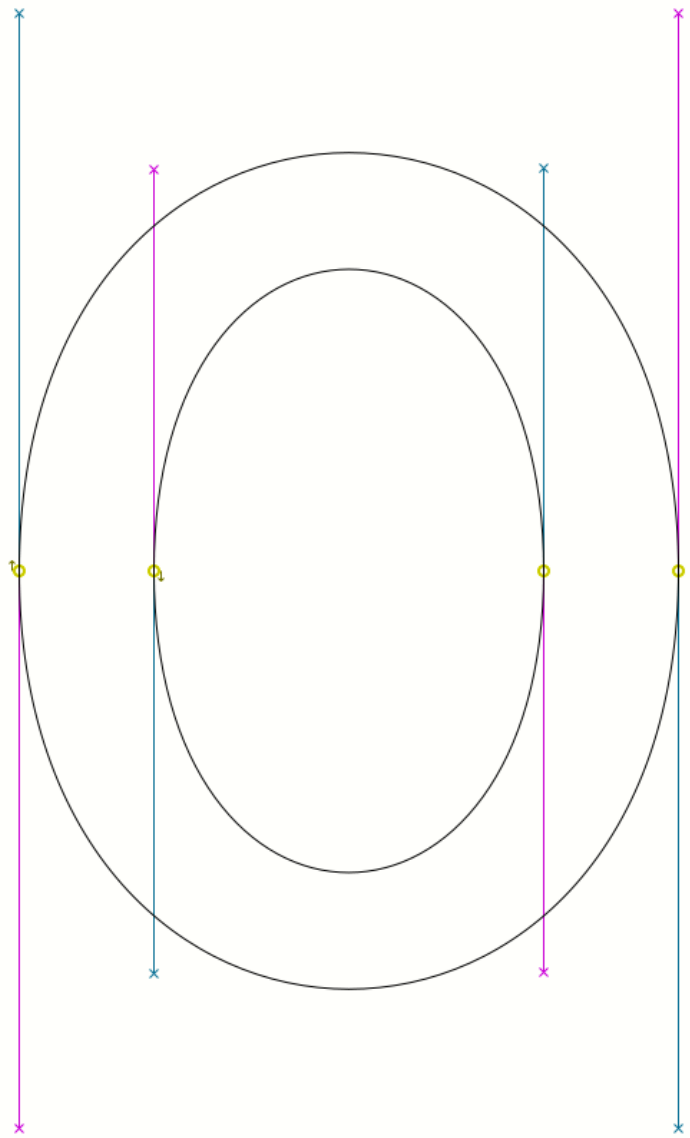


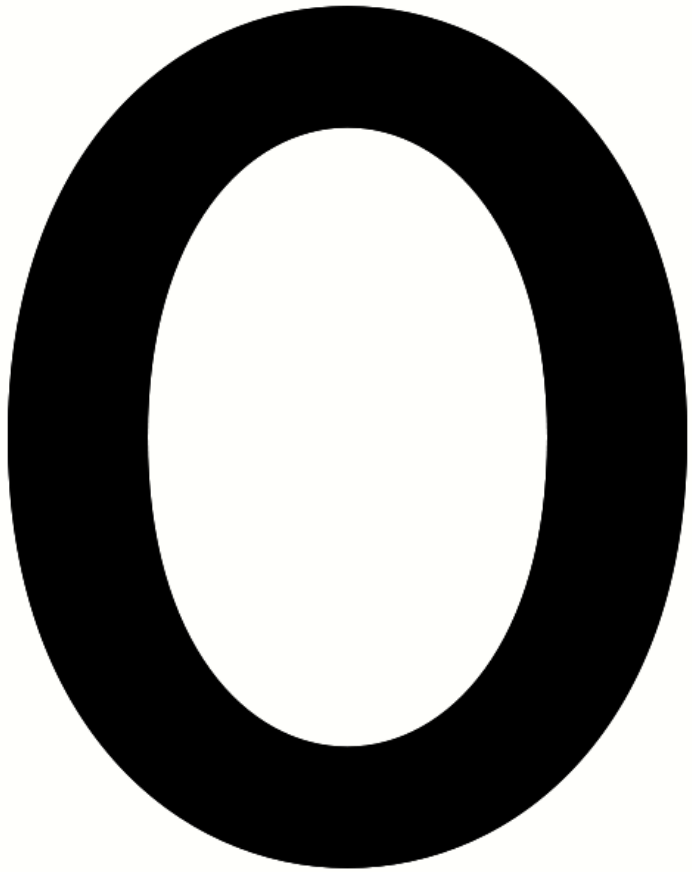
experiment with merging (removing) points (ctrl-m) to see how the curve automatically reshapes.





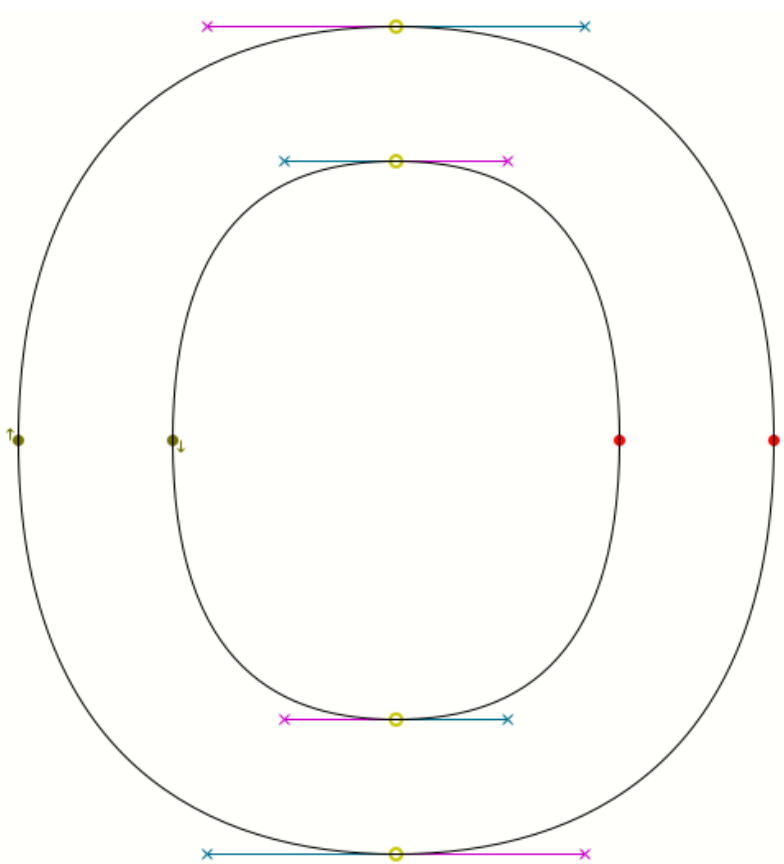
with points merged (removed) on the vertical axis, experiment with moving the points of the horizontal axis. Note how the curve reshapes.

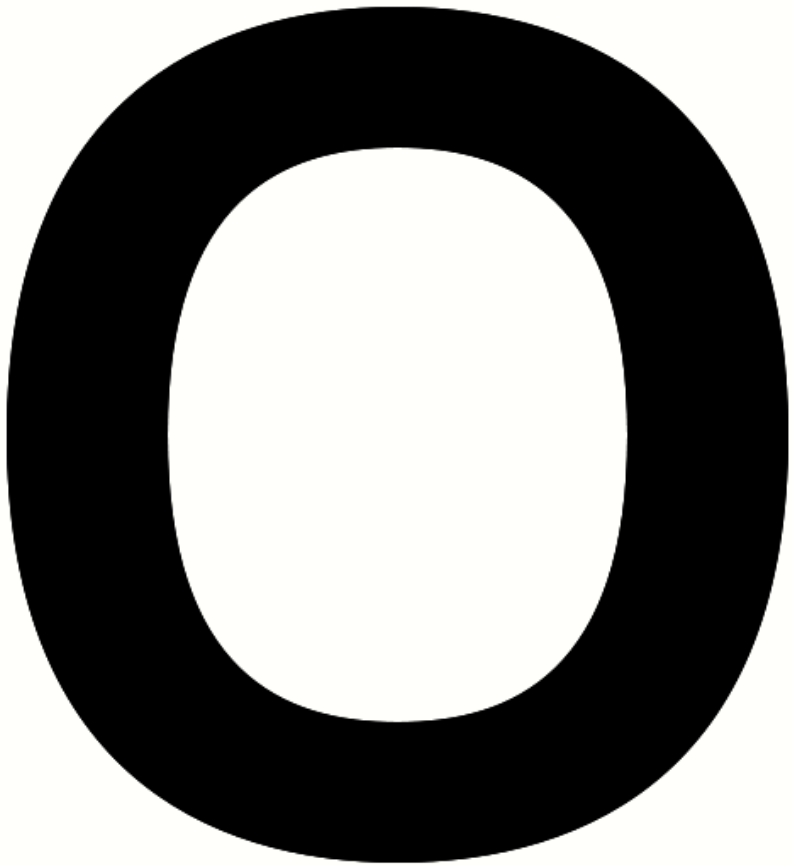




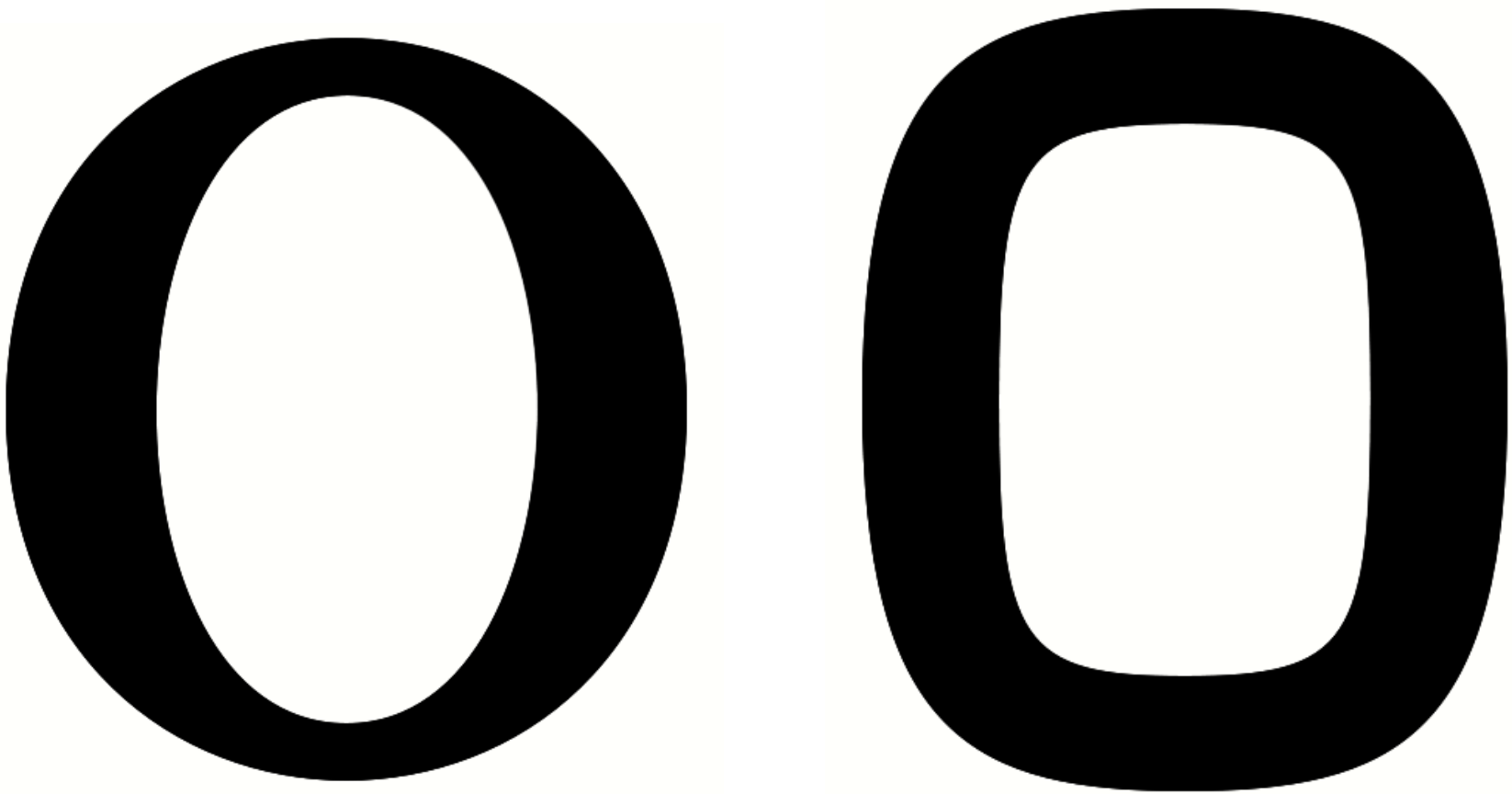
Points can be automatically added to the extremes of curves by using the Add Extrema function (ctrl+shift+x) found under the 'Element' menu.

Then these new points can be moved to reshape the curves again.





Experiment with the contrast between the outer curve and the inner (counter) curve.
Experiment with the type of curves, round? or more square?



Drawing with points.

• intro to using curve point tools, creating curves and ellipses.

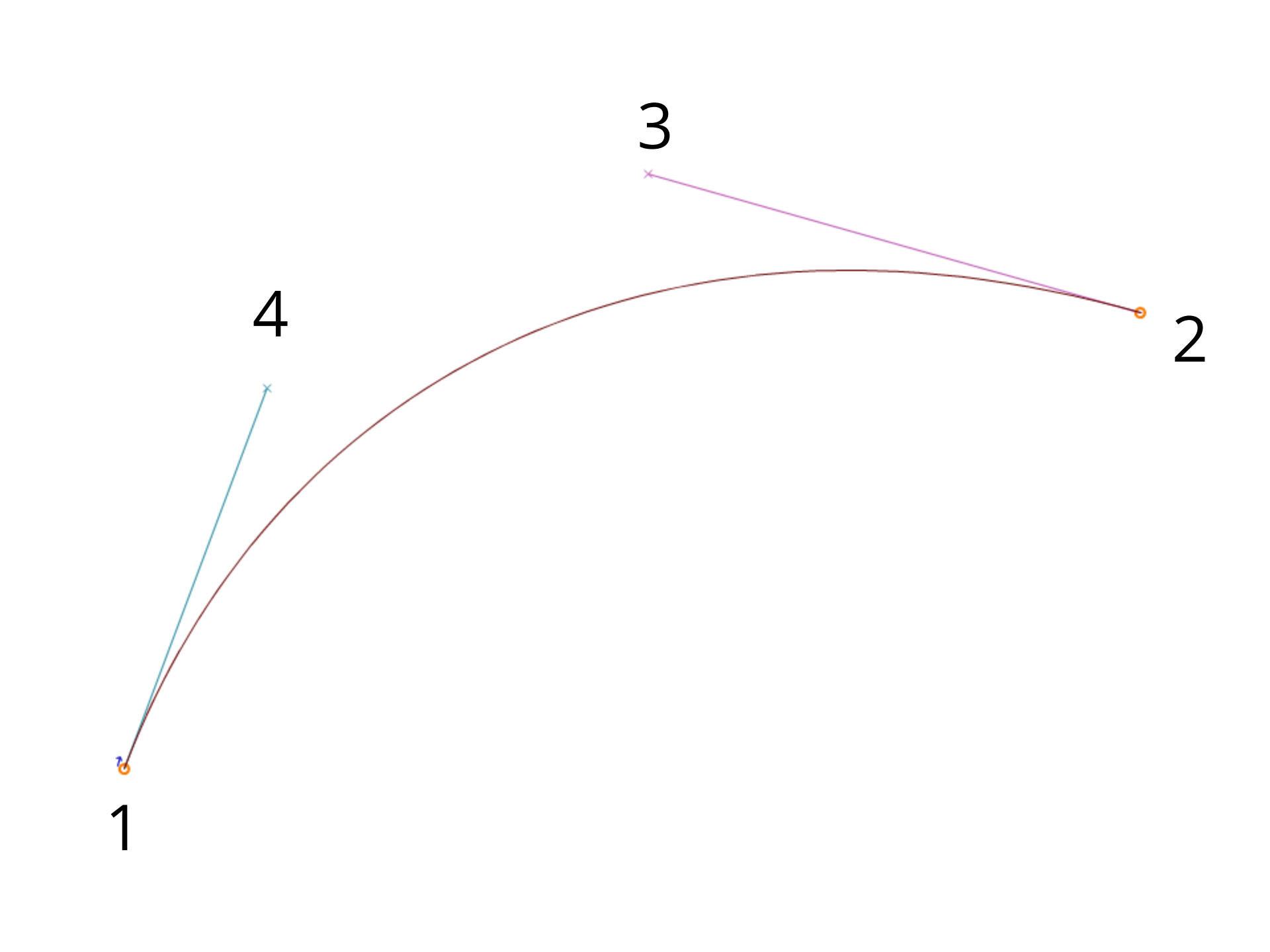
• more practice moving points, reshaping bezier curves.

• more practice merging (removing) points and adding points.

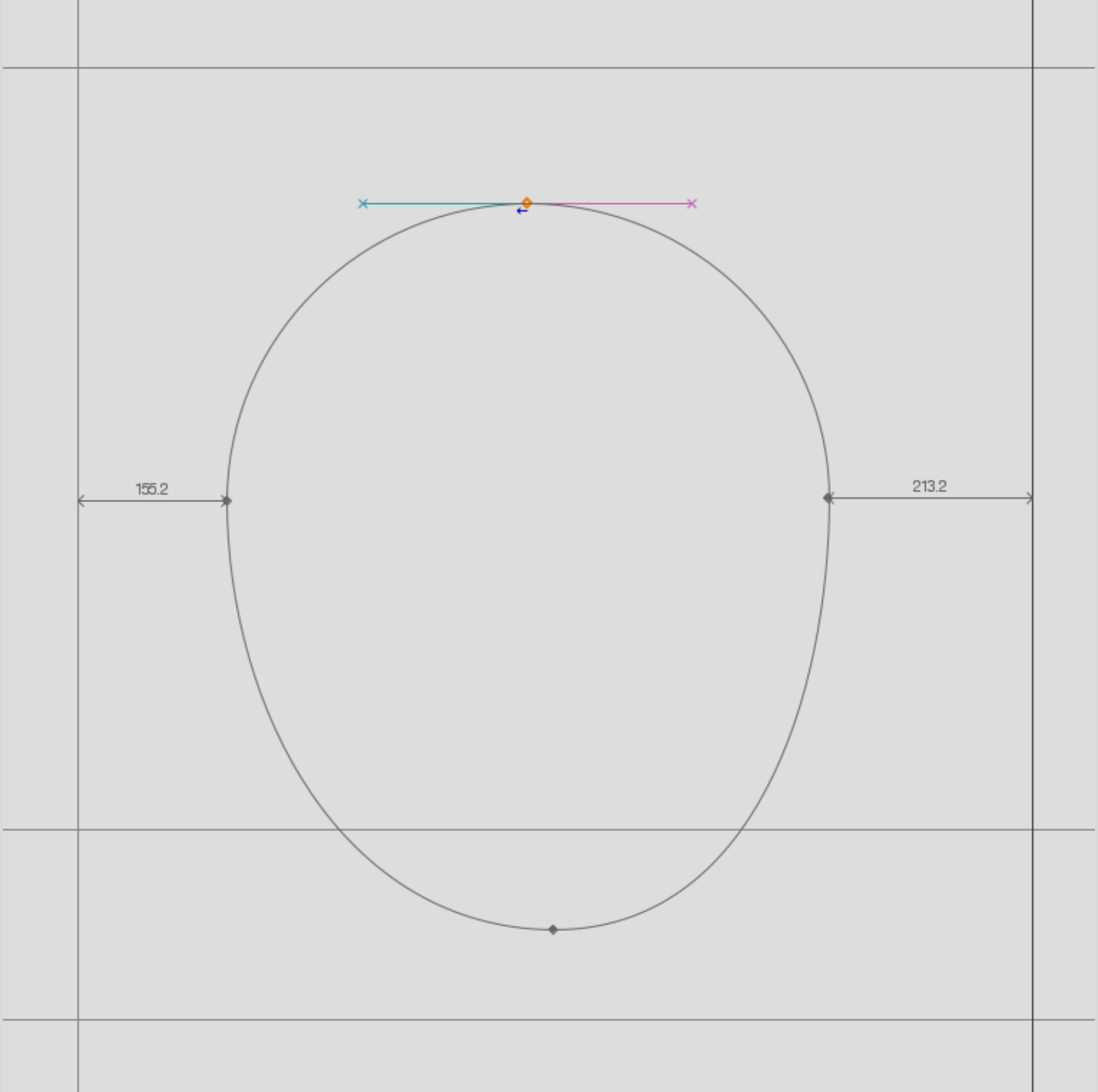
A little about curves

Each path in Fontforge is composed of a series of Bézier splines and line segments.

Each spline is defined by four points;
two end points of the spline and two more (the 'handles') to describe the slope of the spline at those end points.


3
4
2
1

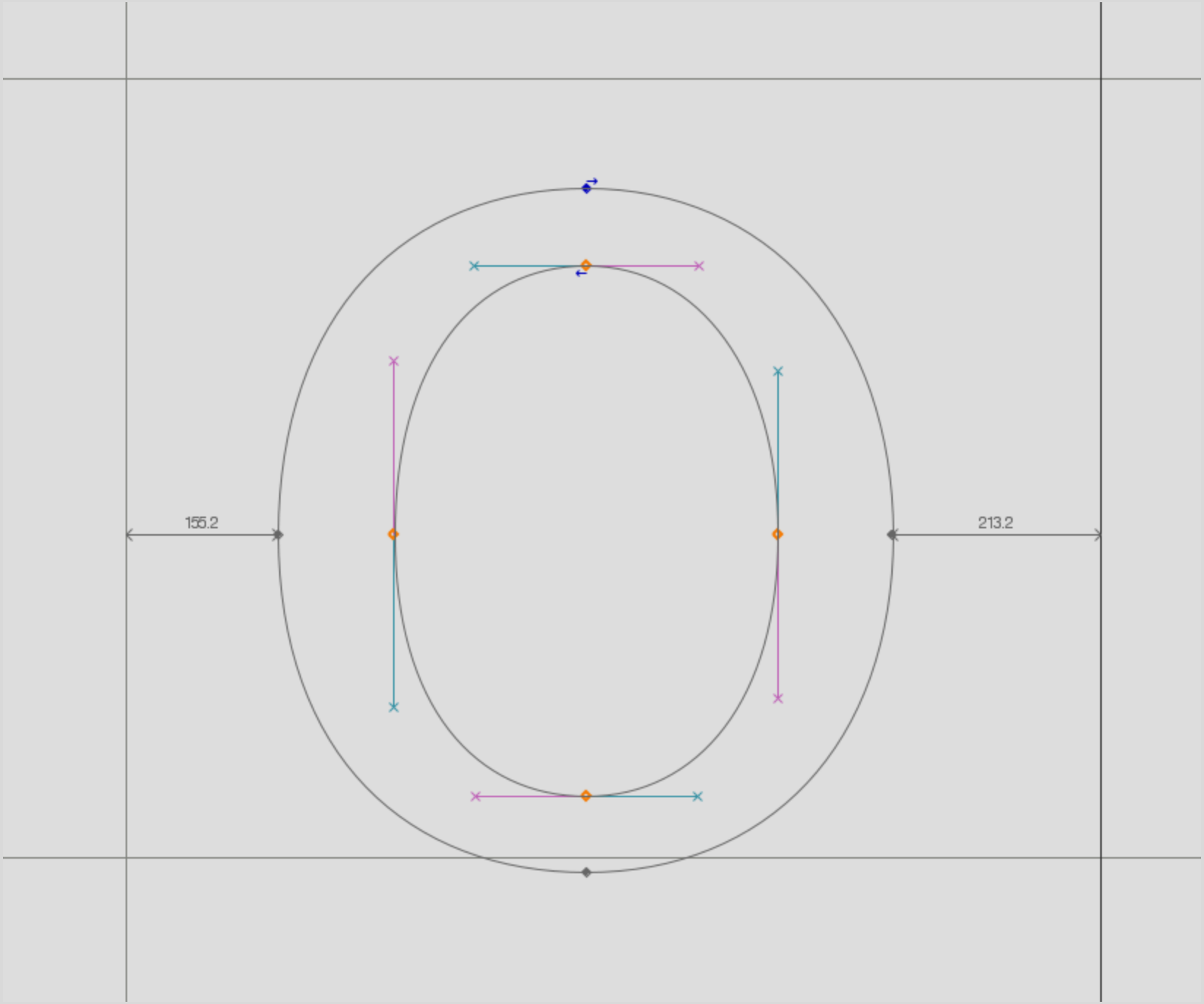
Selecting the HV curve tool we can add 4 points in a clockwise direction with a final click of the point tool back onto the first point we created.


155.2
213.2

We can then position these points to create the desired outer curve of our 'o'.

In addition we can adjust the bezier handles to further fine tune our curve.

Once satisfied with our curve we can duplicate it with a copy and paste command and then resize our 2nd curve with the transform tool to create the counter curve of our 'o'. Finally use the 'correct direction' function to turn the inner curve counter clockwise.


155.2
213.2

Now we can move on to spacing our 'o'.

the Metrics window

Two key tools in spacing a font are;

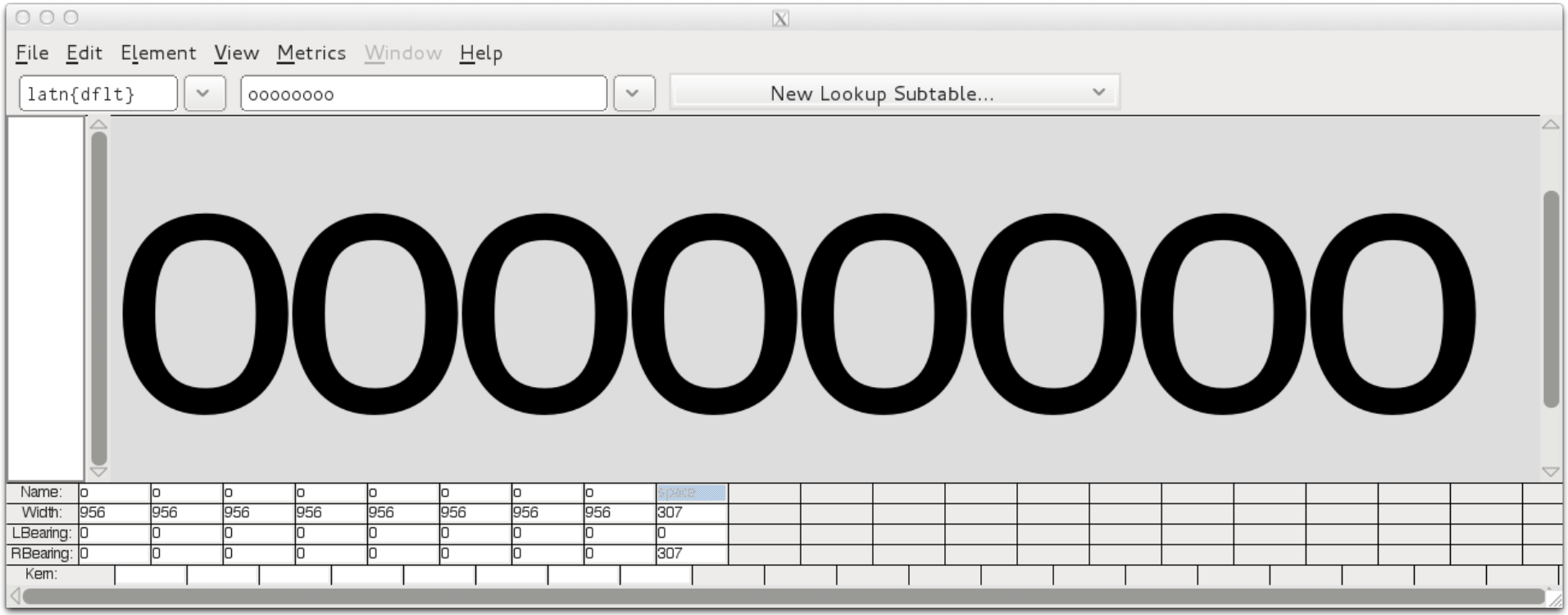
- your eyes
- your sense of visual 'balance'

When we space this 'o' we are going to be looking at what sort 'rhythm' is created by our spacing.

Essentially, what amount of space looks or feels 'right'.

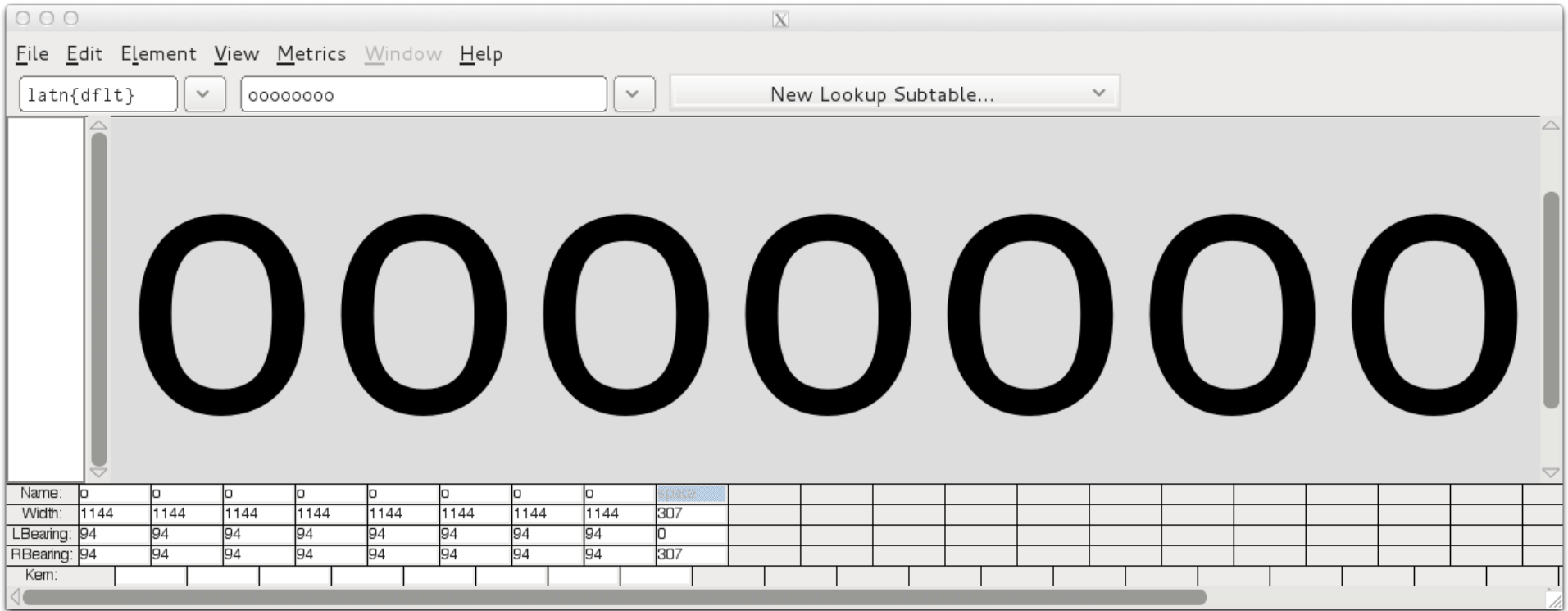
This spacing can be a matter of taste, but we may see that there is a strong concensus on what is a well spaced 'o' and what is not.

So let's start with something we know is wrong; an o with no spacing. This looks wrong, right?



To increase the space that falls to each side of the 'o' we can increase size of the left or right side bearing, or by increasing the overall width.

We can increase the overall width untill the string looks right. This should be tested at various pt sizes.



We have now drawn and spaced an 'o'