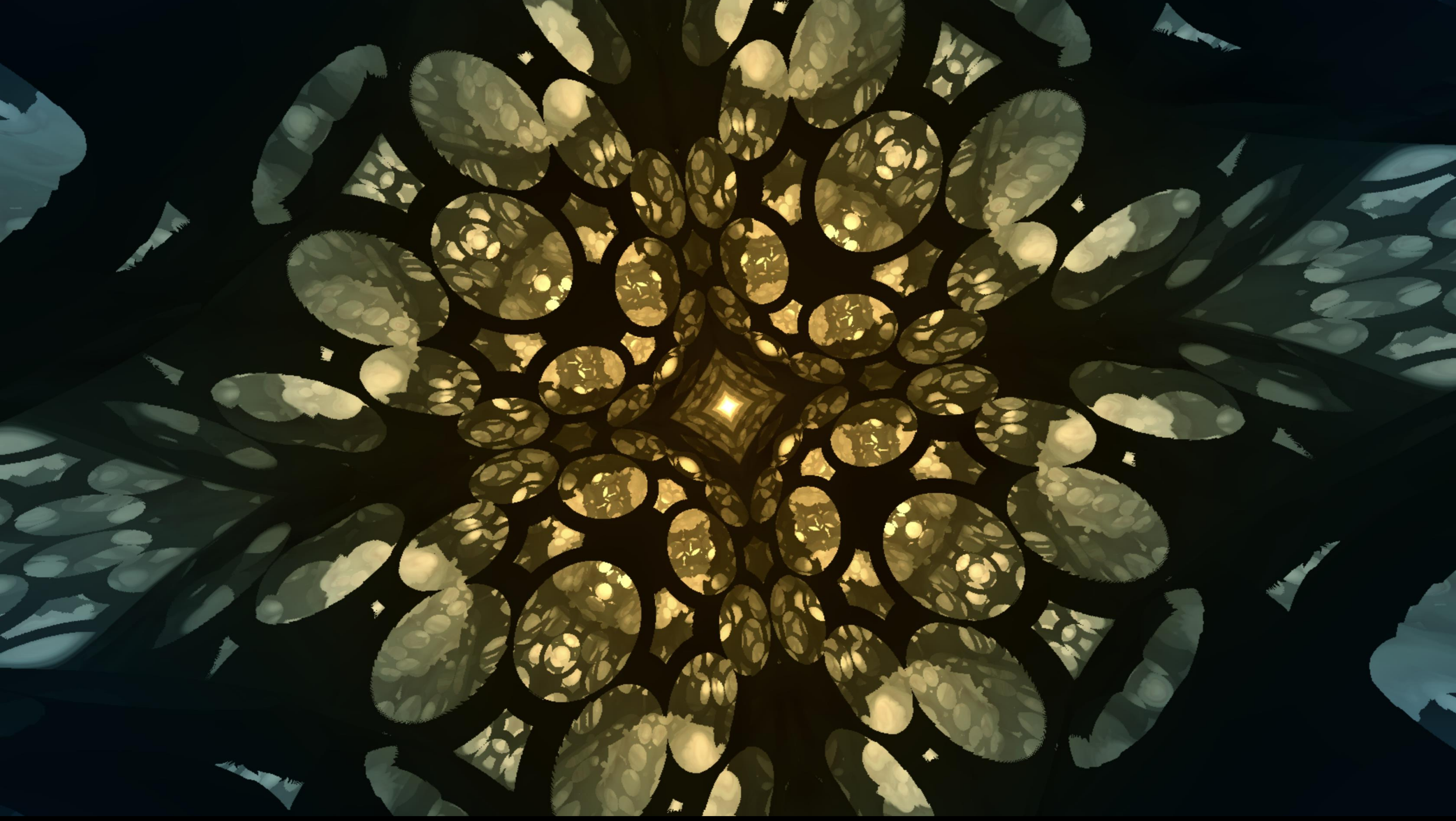
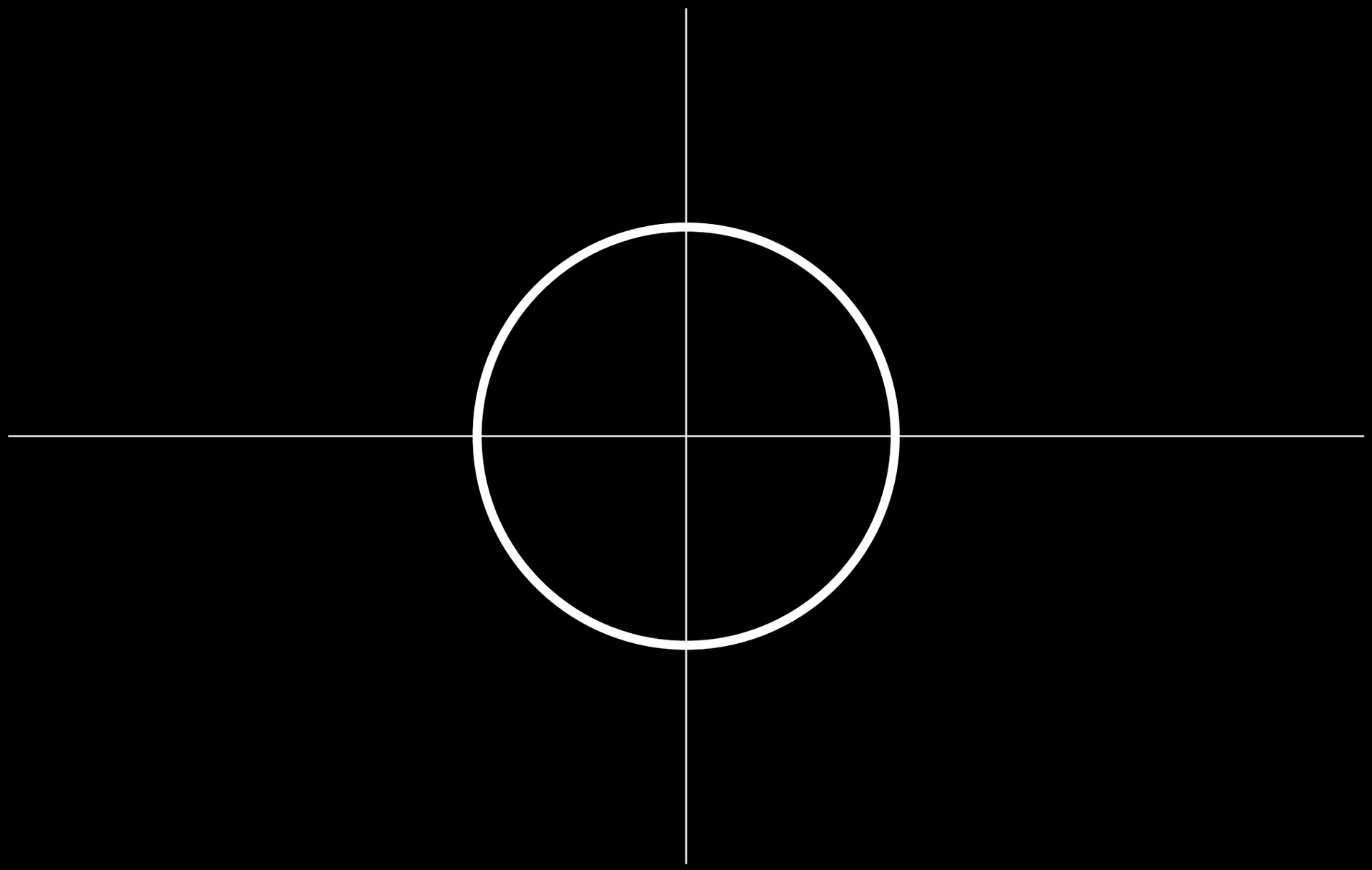


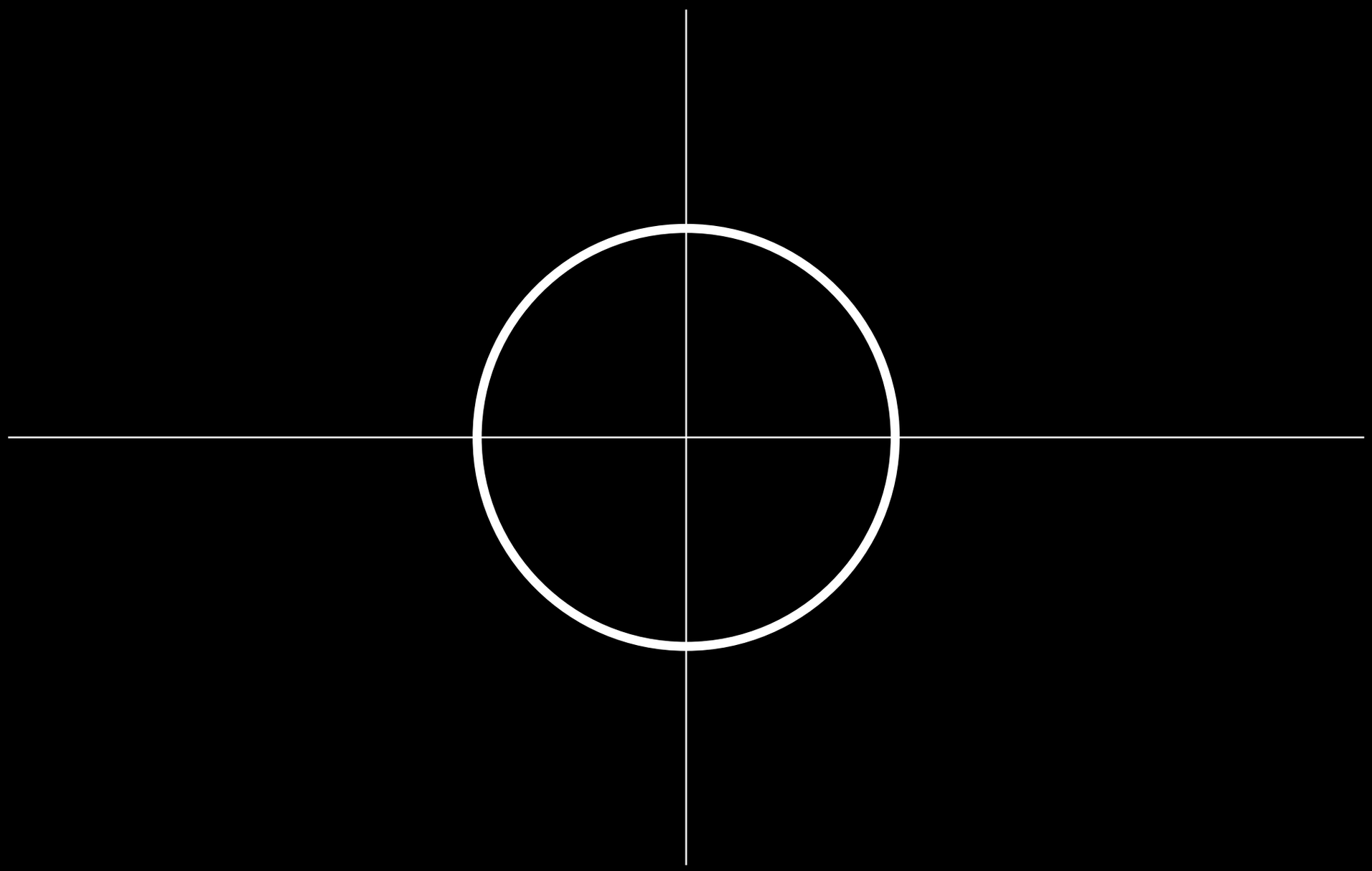
Digital Art & Distance Functions

Will Kirkby
@willkirkby

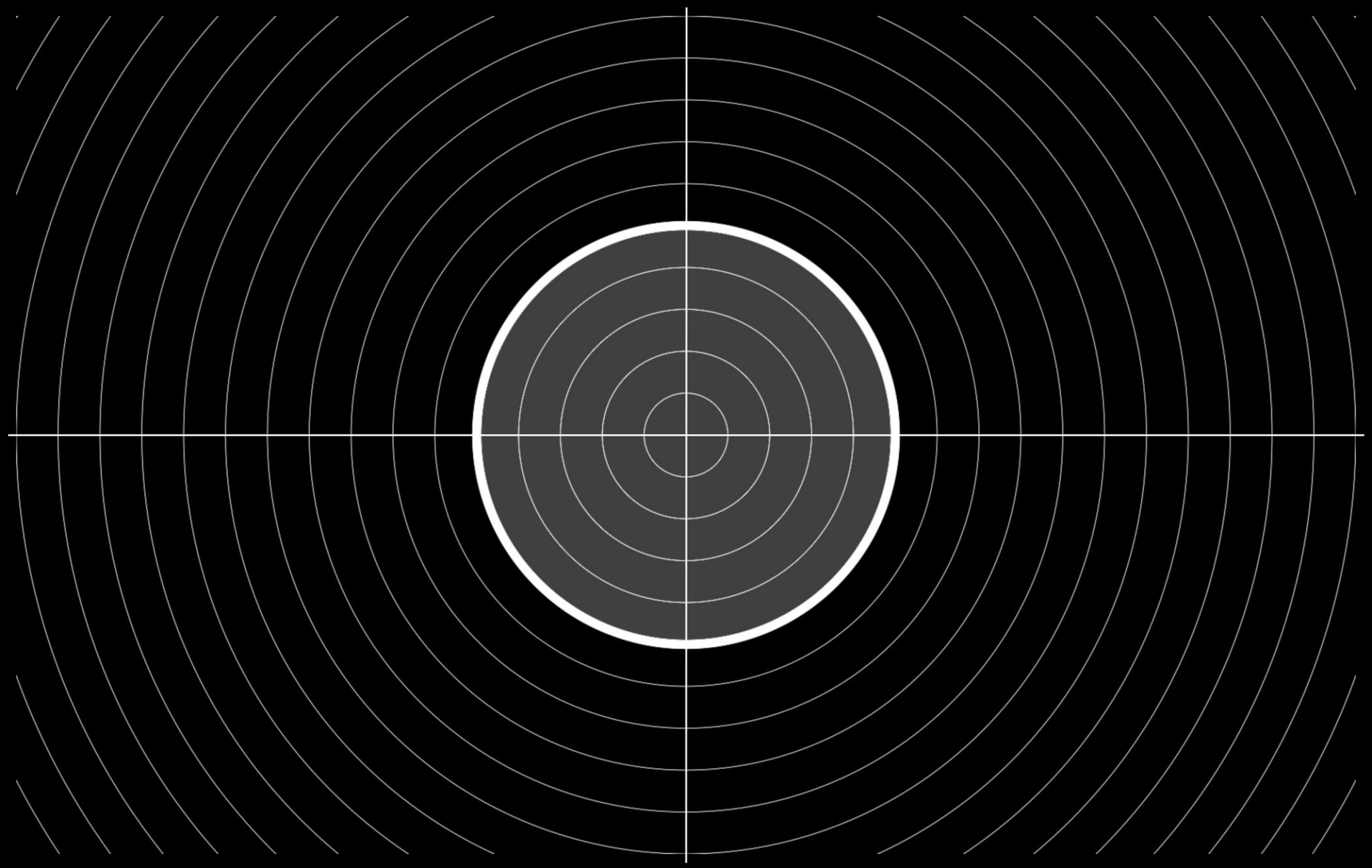
$$x^2 + y^2 = r^2$$



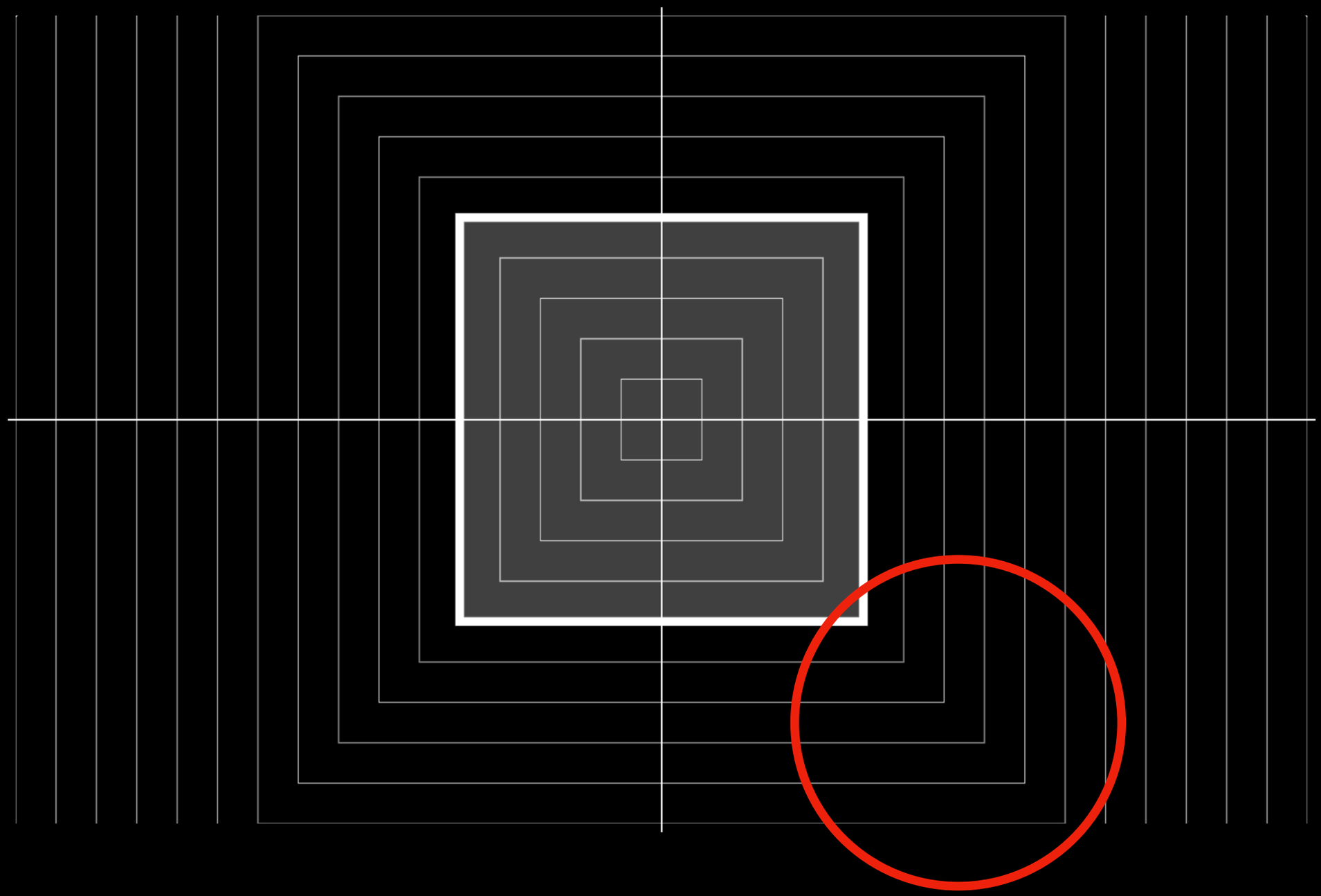
$$\text{sqrt}(x^2 + y^2) = r$$



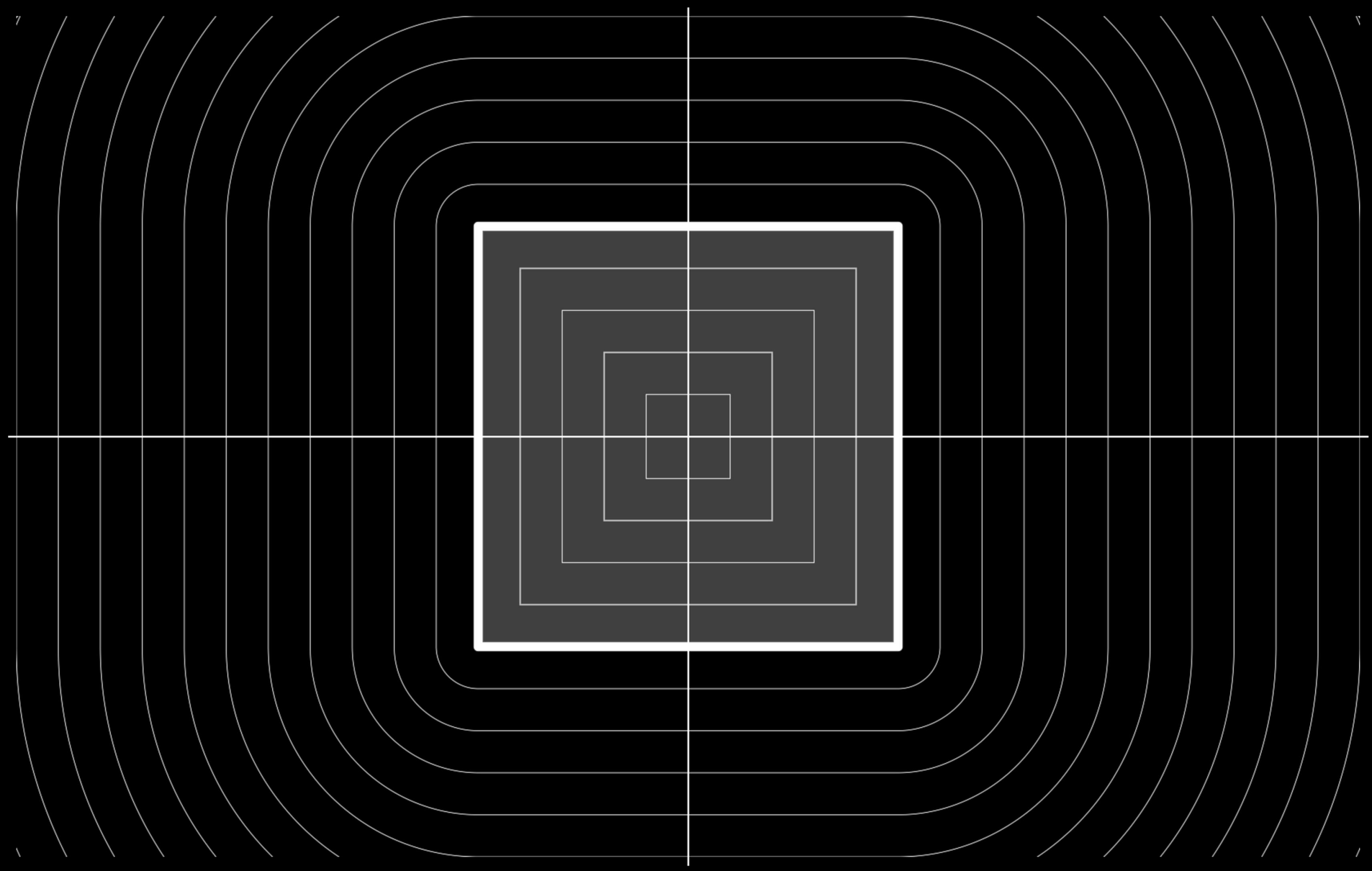
$$\text{sqrt}(x^2 + y^2) - r$$



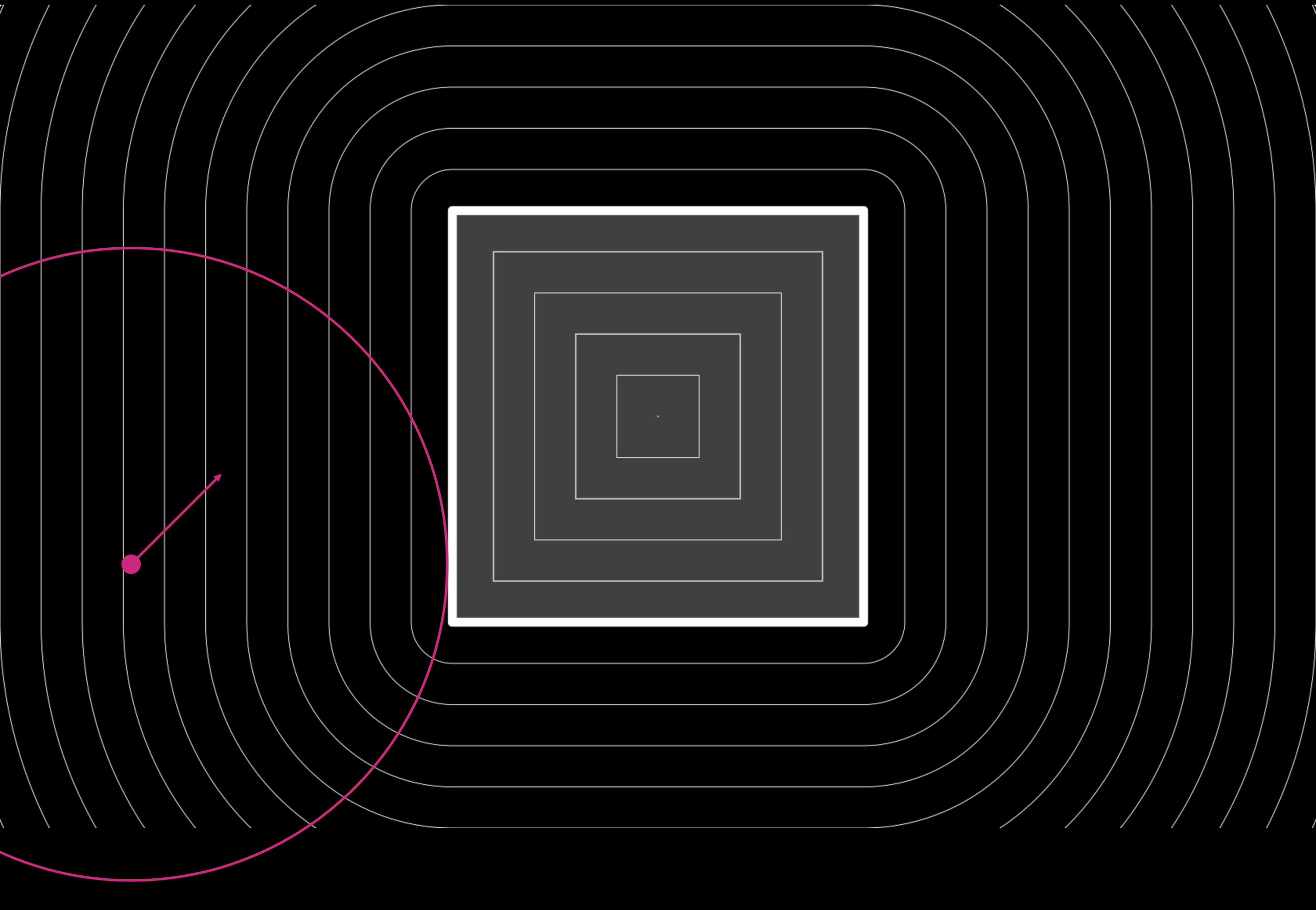
lazy rectangle: max(abs(x) - w, abs(y) - h)

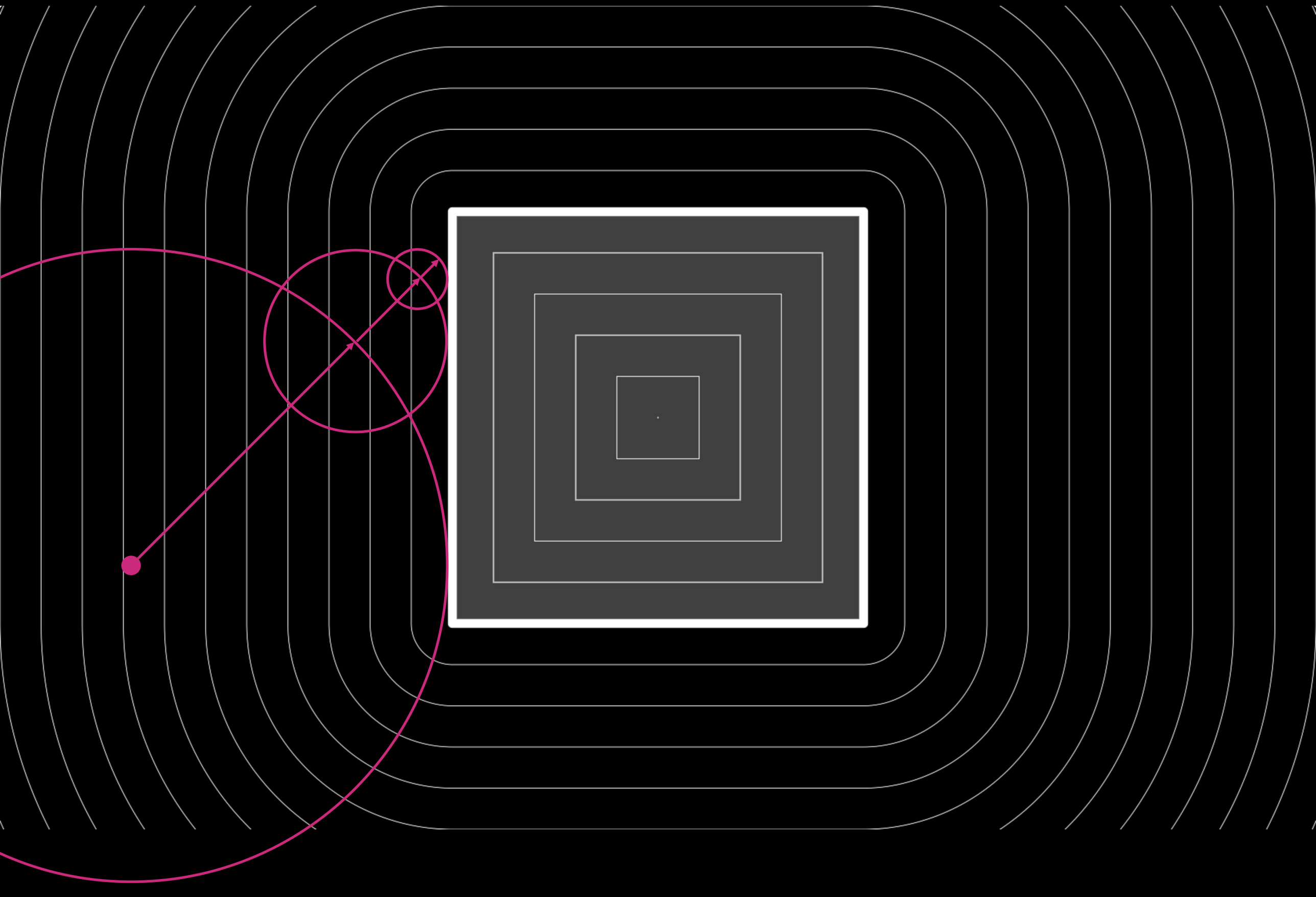


actual rectangle: something complicated



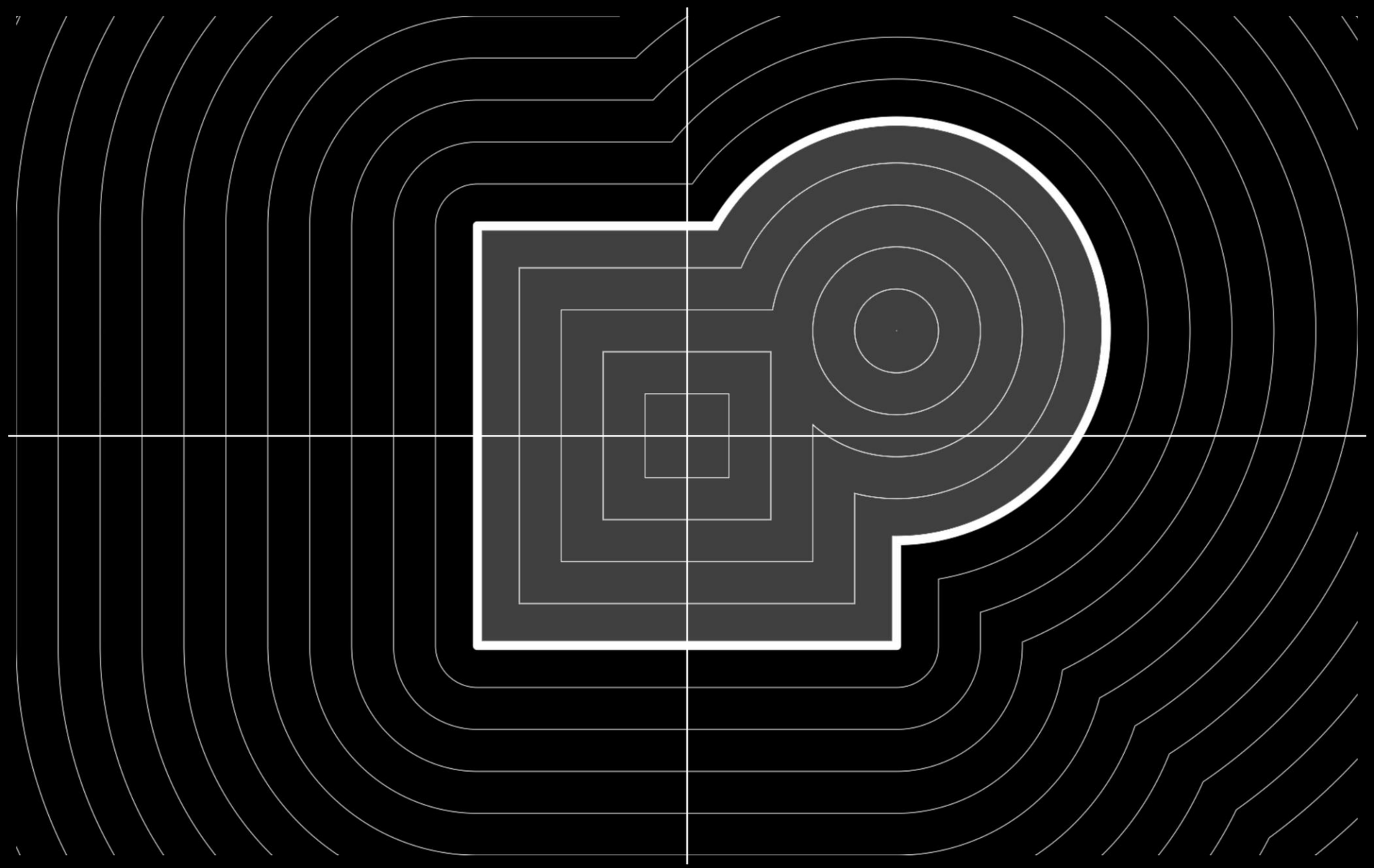
"That's great! But can I find where a ray intersects the boundary?"



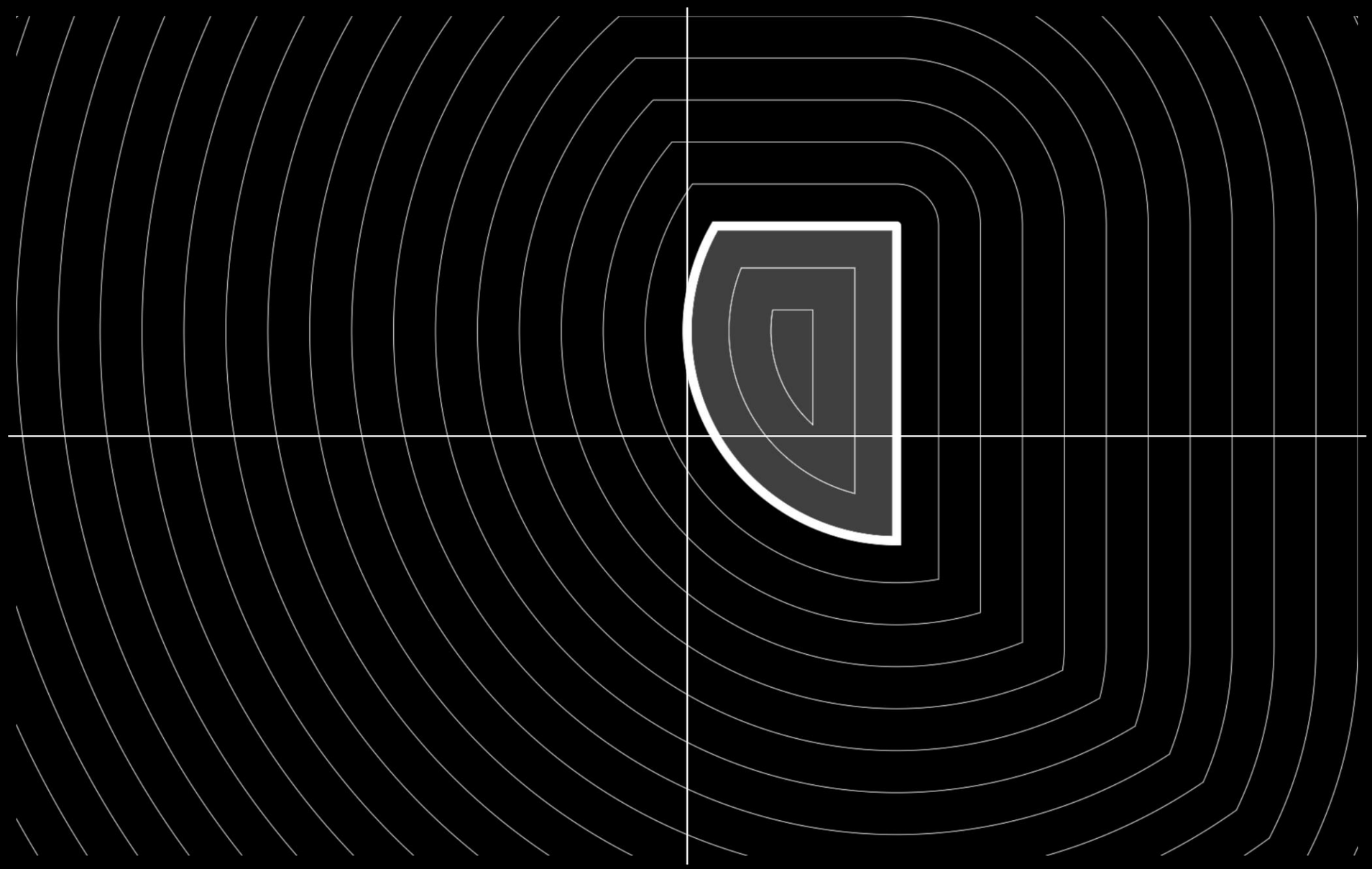


“But can I combine shapes?”

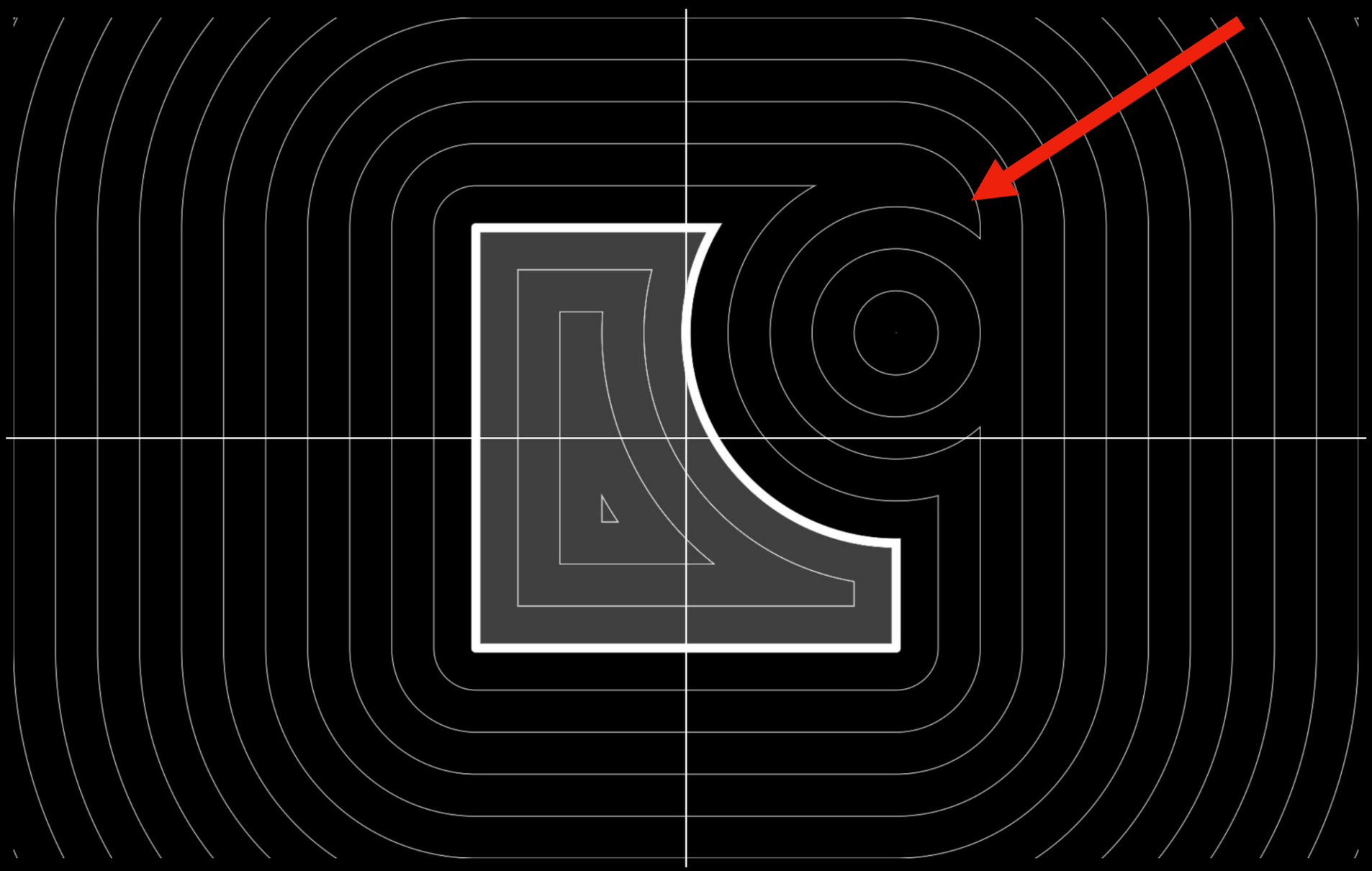
union: min(a, b)



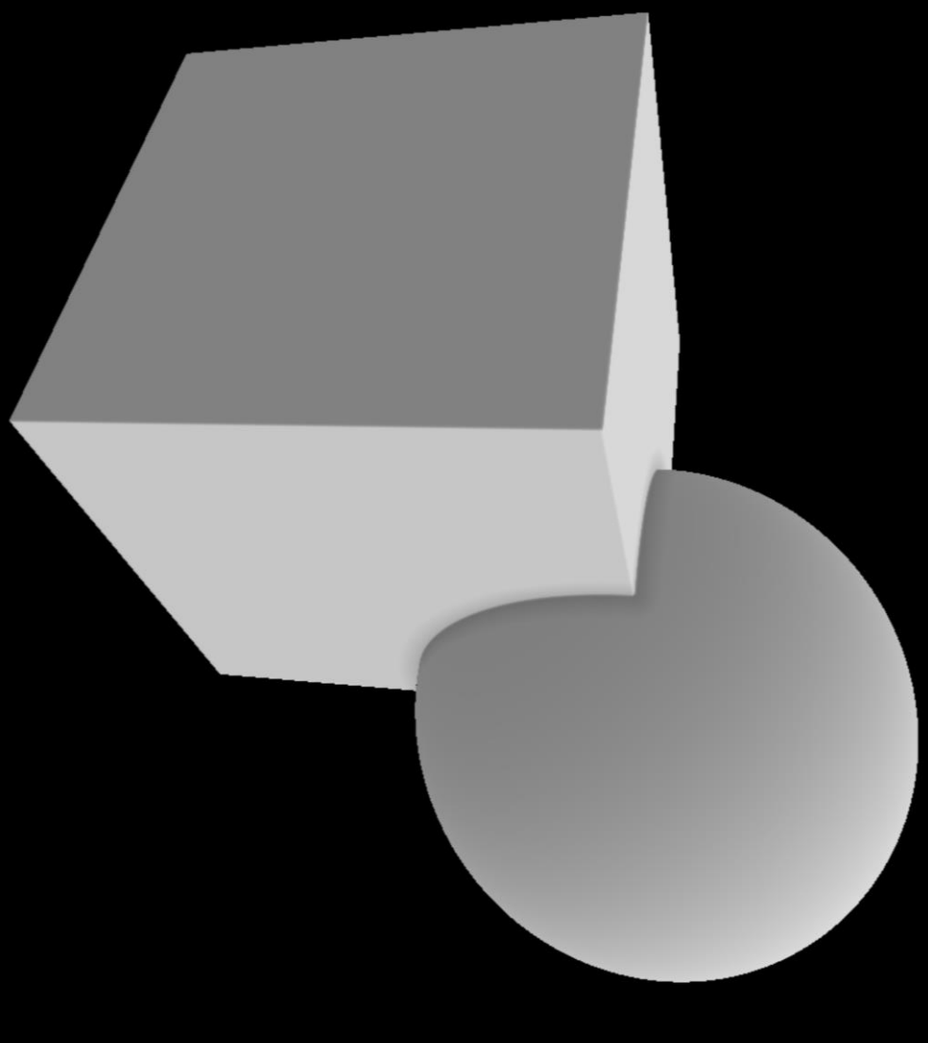
intersection: max(a, b)



subtraction: max(a, -b)



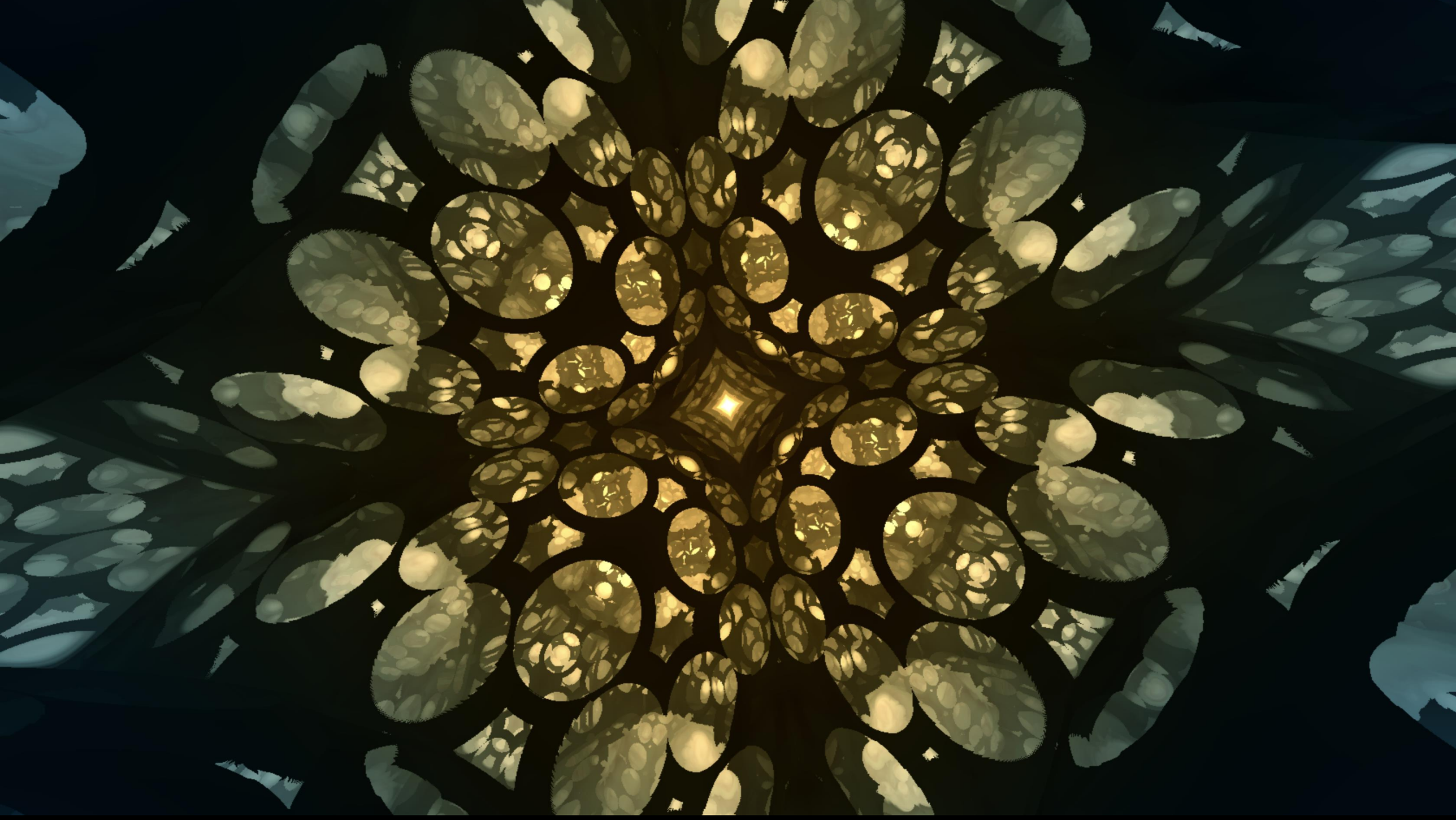
“But does it scale to 3D?”



“Where are you going with this?”

The Demoscene

- Art as software, typically animated with music
- Limited hardware or small executable size
- Procedural content and lots of patterns



“The Scene Is Dead” by Razor 1911

Thanks for your time!

@willkirkby