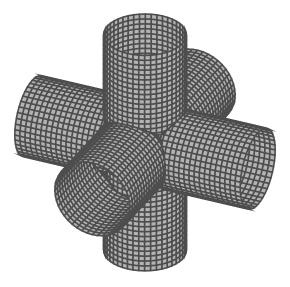
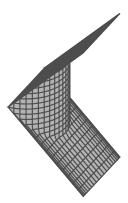
This topic was originally discussed in the LaTeX development community two years ago in this post: https://tex.stackexchange.com/questions/404273/how-to-draw-two-intersecting-cylinders?noredirect=1&lq=1

I fiddled around with the code from the above link lasst night and was able to implement a third cylinder. In doing so, I have developed a confidence that I could create similar diagrams.



I am still having trouble completing the parametric function for a portion off the surface of intersection of the cylinders; this is what I've got so far, and a link to an active discuss I am having on the topic is in the email



And this is a solution using Asymptote; when I learn Asymptote, I am confident that I could do it in a more visually appealing way: