Exercises

E22.4 [1Q4] Let $a > 0$. Show that the equation $\sqrt{x} + \sqrt{y} + \sqrt{z} = \sqrt{a}$ defines a regular surface inside the first octant $\{x > 0, y > 0, z > 0\}$. Prove that planes tangent to the surface cut the three coordinate axes at three points, the sum of whose distances from the origin is constant.

Solution 1. *[1Q5]*