

Constructive Geometry 2020-2021

Quadratic surfaces – homework

Given:

Quadratic surface ρ

$$\rho: x^2 - 4y^2 - z^2 - 4x - 16y - 2z - 17 = 0$$

and planes

$$\alpha: y = -2, \beta: z = -1, \gamma: x = -1.$$

Required:

1. Determine the type of quadratic surface ρ and its characteristics.
2. Determine equations of intersection curves of the surface ρ and planes α, β, γ .
3. Determine the type and characteristics of all these intersection curves.
4. Draw all intersection curves as the front view, top view and profile view of the surface ρ .