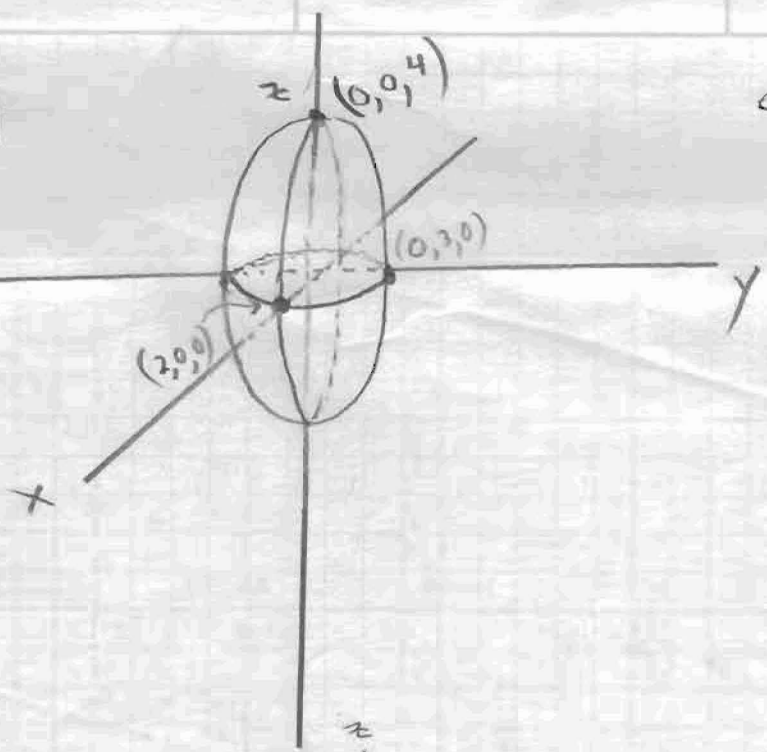


1

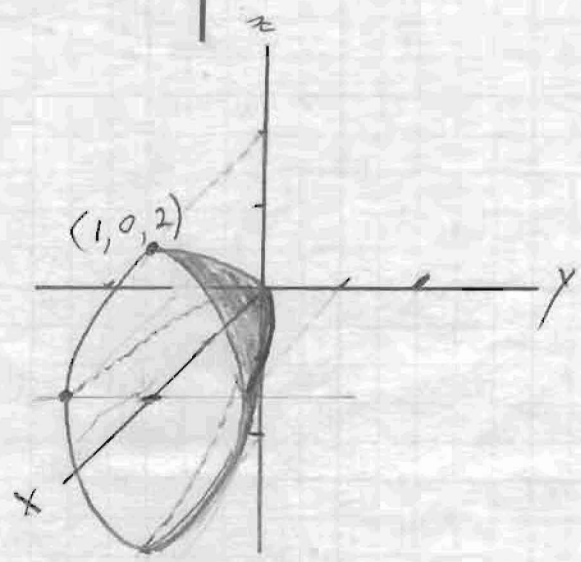
a)

ellipsoid



b)

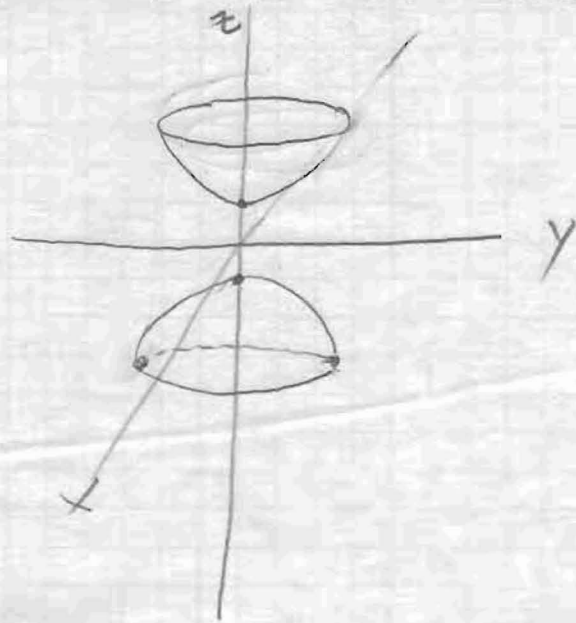
paraboloid



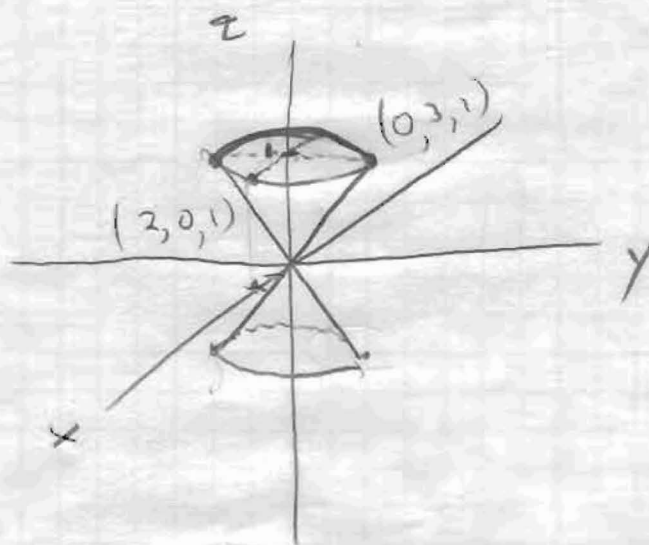
$$c) \quad z^2 = 1 + \frac{x^2}{4} + \frac{y^2}{9}$$

$$z^2 - \frac{x^2}{4} - \frac{y^2}{9} = 1$$

hyperboloid of two sheets

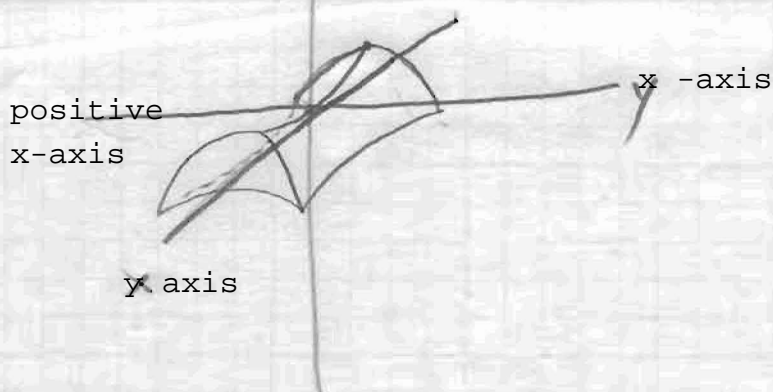


$$d) \quad z^2 = \frac{x^2}{4} + \frac{y^2}{9} \quad \text{cone}$$



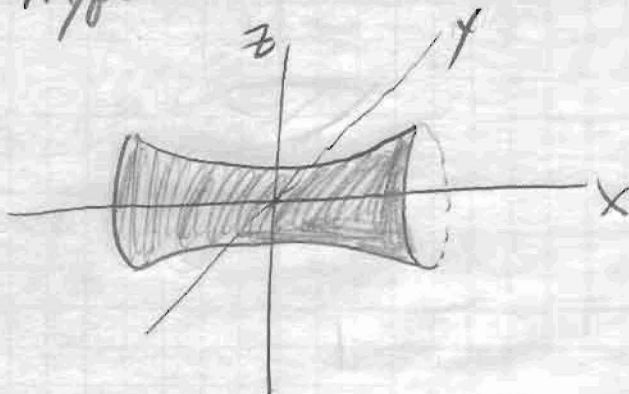
e)  $z = \frac{y^2}{16} - \frac{x^2}{9}$

hyperbolic paraboloid



f)  $y^2 + \frac{z^2}{9} - x^2 = 1$

hyperboloid of one sheet



2 or 3

$$y^2 + 4y + 4x + z^2 - 10z + 29 = 0$$

$$y^2 + 4y + 4 + 4x + z^2 - 10z + 25 = 0$$

$$(y+2)^2 + 4x + (z-5)^2 = 0$$

$$4x = -[(y+2)^2 + (z-5)^2]$$

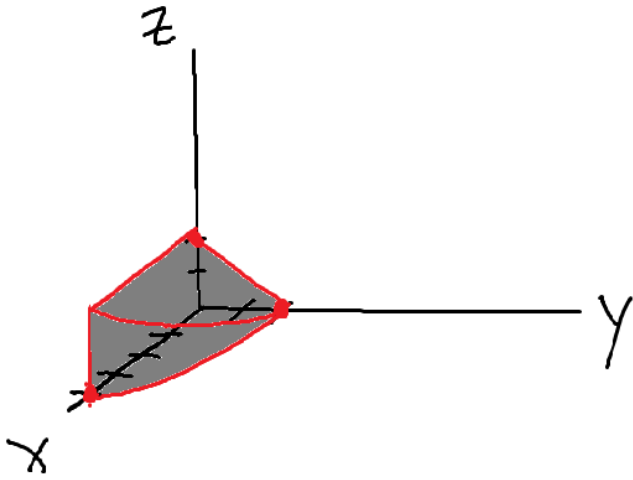
$$x = -\left[\frac{(y+2)^2}{4} + \frac{(z-5)^2}{4}\right]$$

Elliptic  
Paraboloid

b)  $(x-4)^2 + (y+2)^2 + (z-7)^2 = 25$

Sphere (ellipsoid) with center (4, -2, 7) and r=5

3



4

