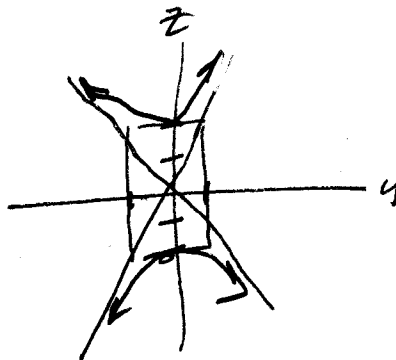


$$\textcircled{1} \quad z^2 - x^2 - 4y^2 = 4$$

$$\boxed{x=0}$$

$$z^2 - 4y^2 = 4$$

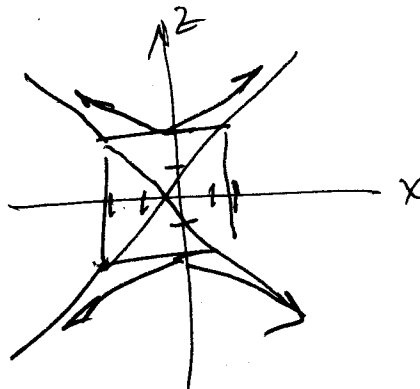
$$\frac{z^2}{4} - \frac{y^2}{1} = 1$$



$$\boxed{y=0}$$

$$z^2 - x^2 = 4$$

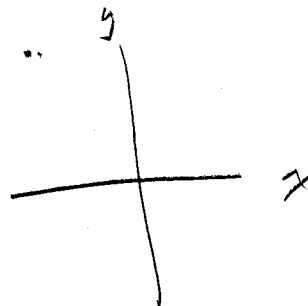
$$\frac{z^2}{4} - \frac{x^2}{4} = 1$$



$$\boxed{z=0}$$

$$-x^2 - 4y^2 = 4$$

$$x^2 + 4y^2 = -1$$

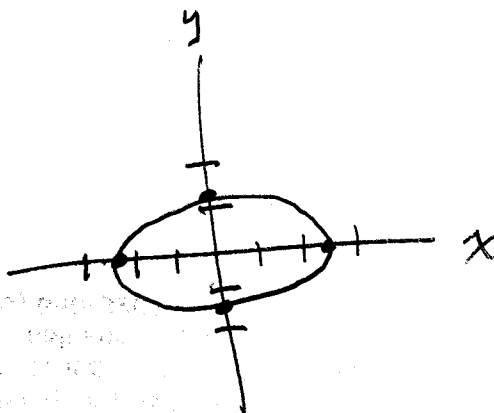


$$\boxed{z=\pm 3}$$

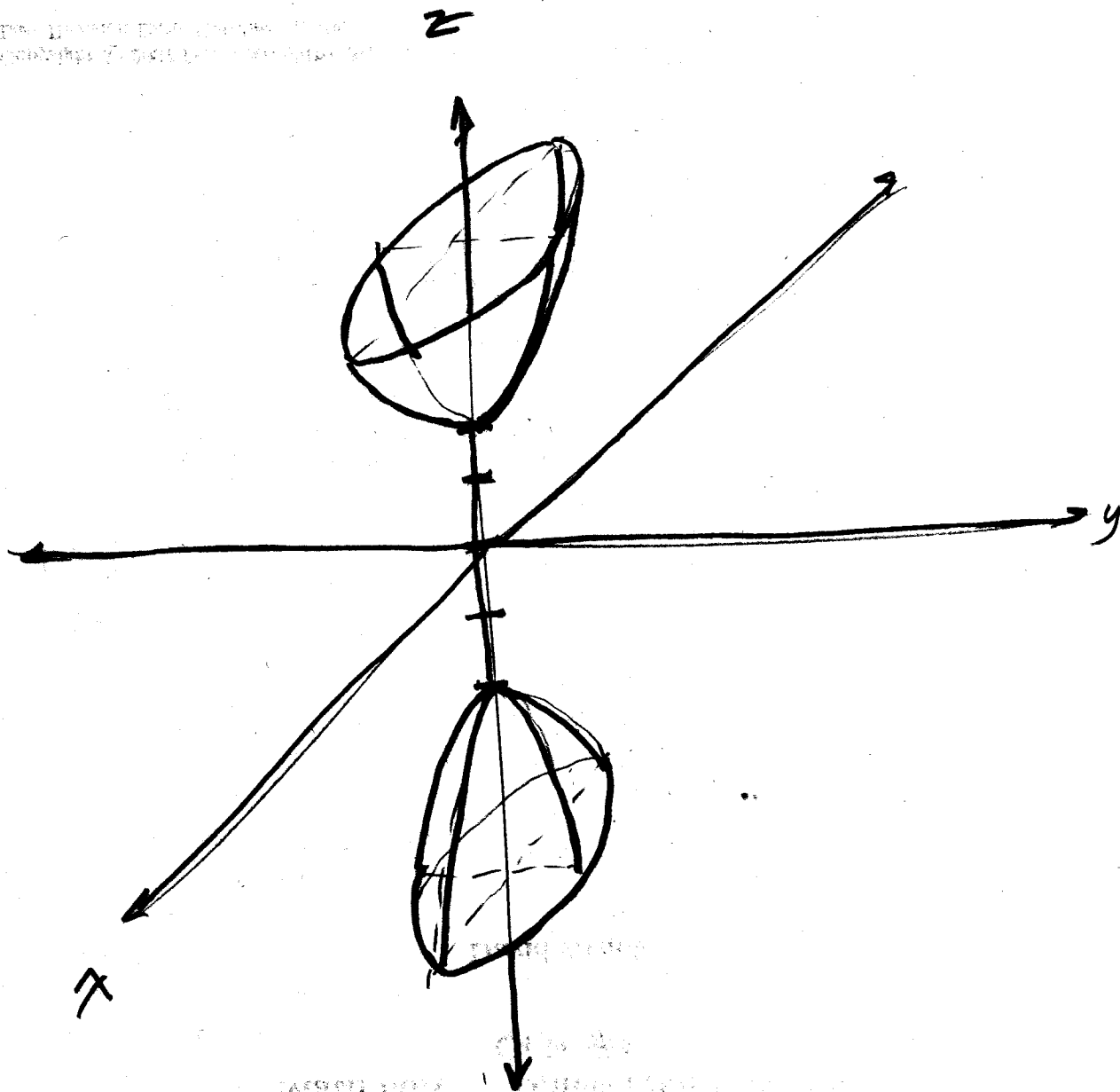
$$9 - x^2 - 4y^2 = 4$$

$$x^2 + 4y^2 = 5$$

$$\frac{x^2}{5} + \frac{y^2}{5/4} = 1$$



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$$z^2 - x^2 - 4y^2 = 4$$

Let

$$x = r \cos \theta$$

$$y = r \sin \theta$$

$$z^2 - r^2 \cos^2 \theta - 4r^2 \sin^2 \theta = 4$$

$$z^2 - 4 = r^2 (\cos^2 \theta + 4 \sin^2 \theta)$$

$$r = \sqrt{\frac{z^2 - 4}{\cos^2 \theta + 4 \sin^2 \theta}}$$

Domain: $\{(\theta, z) : 0 \leq \theta \leq 2\pi, |z| \geq 2\}$