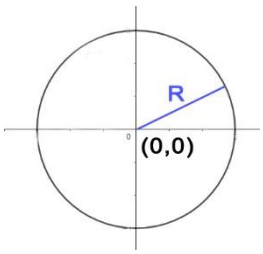
Parametrizaciones:

Circunferencia:

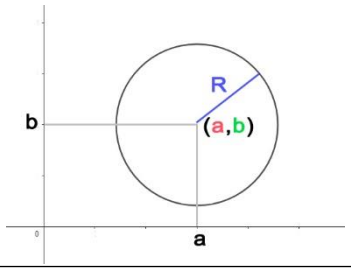


$$x^2 + y^2 = R^2$$

$$\begin{cases} x = R\cos\theta \\ y = R\sin\theta \end{cases}$$

$$0 \le \theta \le 2\pi$$

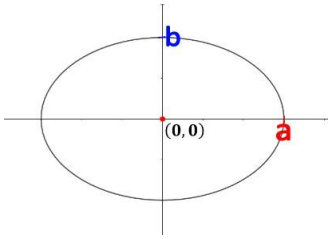
$$(x-a)^2 + (y-b)^2 = R^2$$



$$\begin{cases} x = a + R\cos\theta \\ y = b + R\sin\theta \end{cases}$$

$$0 \le \theta \le 2\pi$$

Elipse:

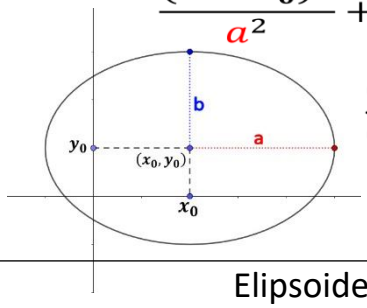


$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$\begin{cases} x = a\cos\theta \\ y = b\sin\theta \end{cases}$$

$$0 \le \theta \le 2\pi$$

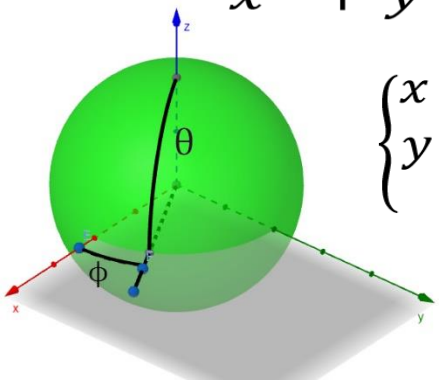
$$\frac{(x-x_0)^2}{a^2} + \frac{(y-y_0)^2}{b^2} = 1$$



$$\begin{cases} x = x_0 + a\cos\theta \\ y = y_0 + b\sin\theta \end{cases}$$

$$0 \le \theta \le 2\pi$$

Esfera:



$$x^2 + y^2 + z^2 = R^2$$

$$\begin{cases} x = R\cos\phi\sin\theta \\ y = R\sin\phi\sin\theta \\ z = R\cos\theta \end{cases}$$

$$\phi \in [0,2\pi]$$

$$\theta \in [0,\pi]$$

Elipsoide:

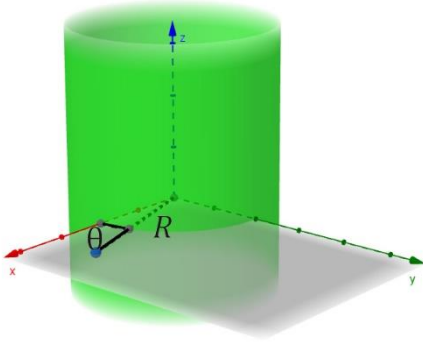
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

$$\begin{cases} x = a\cos\phi\sin\theta \\ y = b\sin\phi\sin\theta \\ z = c\cos\theta \end{cases}$$

$$\phi \in [0,2\pi]$$

$$\theta \in [0,\pi]$$

Cilindro:



$$x^2 + y^2 = R^2$$

$$\begin{cases} x = R\cos\theta \\ y = R\sin\theta \\ z = z \end{cases}$$

$$\theta \in [0,2\pi]$$

$$z \in [-\infty,\infty]$$

Cilindro Elipsoidal:

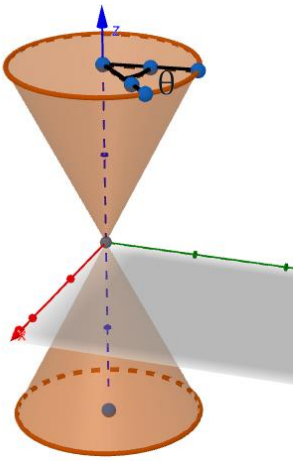
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$\begin{cases} x = a\cos\theta \\ y = b\sin\theta \\ z = z \end{cases}$$

$$\theta \in [0,2\pi]$$

$$z \in [-\infty,\infty]$$

Cono:



$$x^2 + y^2 = z^2$$

$$\begin{cases} x = z\,cos\theta \\ y = z\,sin\theta \\ z = z \end{cases}$$

$$\theta \in [0,2\pi]$$

$$z \in [-\infty, \infty]$$

Cono elipsoidal:

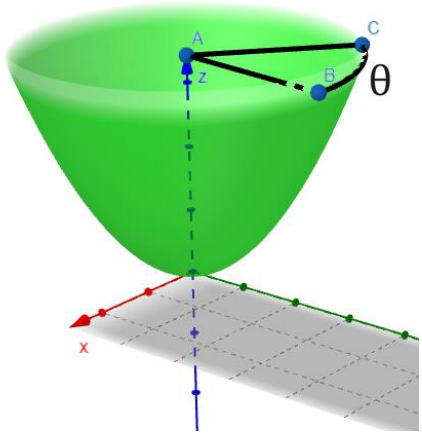
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{z^2}{c^2}$$

$$\begin{cases} x = a\,r\,cos\theta \\ y = b\,r\,sin\theta \\ z = c\,r \end{cases}$$

$$\theta \in [0,2\pi]$$

$$r \in [-\infty, \infty]$$

Paraboloide:



$$x^2 + y^2 = z$$

$$\begin{cases} x = r\,cos\theta \\ y = r\,sin\theta \\ z = r^2 \end{cases}$$

$$\theta \in [0,2\pi]$$

$$r \in [0, \infty]$$

Paraboloide elipsoidal:

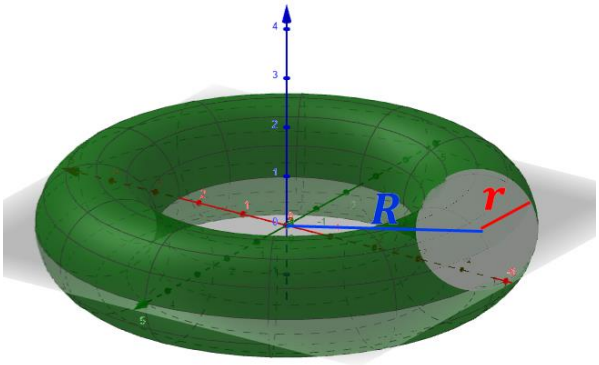
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{z}{c}$$

$$\begin{cases} x = a\,r\,cos\theta \\ y = b\,r\,sin\theta \\ z = c\,r^2 \end{cases}$$

$$\theta \in [0,2\pi]$$

$$r \in [-\infty, \infty]$$

Toro:



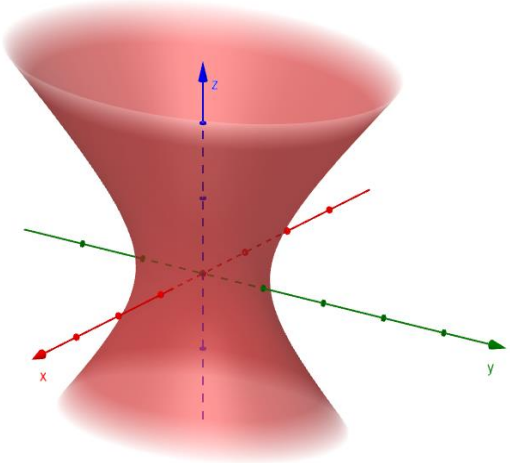
$$(\sqrt{x^2 + y^2} - R^2)^2 + z^2 = r^2$$

$$\begin{cases} x = (R + r\,cos\phi)\,cos\theta \\ y = (R + r\,sin\phi)\,sin\theta \\ z = R sin\phi \end{cases}$$

$$\phi \in [0,2\pi]$$

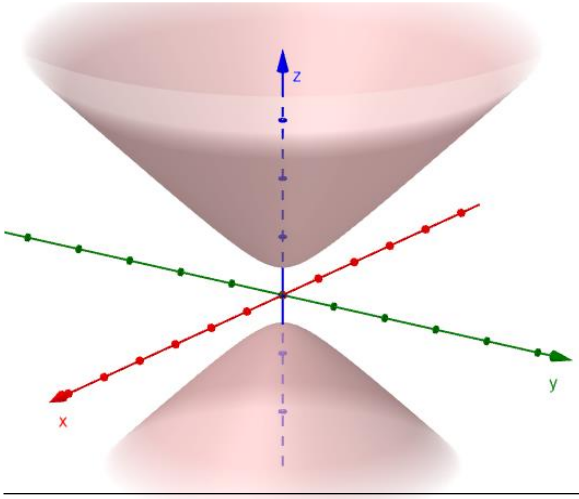
$$\theta \in [0,\pi]$$

Hiperboloide de 1 hoja



$$\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = 1$$

Hiperboloide de 2 hojas



$$\frac{z^2}{c^2} - \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$