

$$\begin{cases} x = a \cos \theta \\ y = b \sin \theta \end{cases} \quad \theta \in [0, 2\pi]$$

1)  $a = b \rightarrow$  Circonferenza di raggio  $a$

2) Se  $a \neq b$

$$\cos^2 \theta + \sin^2 \theta = 1 \rightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

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

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

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

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

$$\begin{array}{ll} x & \theta = 0 \\ y & = 0 \end{array} \quad \begin{array}{l} x = a \\ y = 0 \end{array}$$

$$\begin{array}{ll} x & \theta = \frac{\pi}{2} \\ y & = -b \end{array} \quad \begin{array}{l} x = 0 \\ y = -b \end{array}$$

~~$\frac{\sin(\theta+2)}{\sin \theta} = \frac{\theta+2}{\theta}$~~  !!

$$\sin^2 \alpha \cdot \cos \alpha - 3 \cos^3 \alpha = \alpha \in \left[ -\frac{\pi}{2}, \frac{\pi}{2} \right]$$

$$\cos \alpha (\sin^2 \alpha - 2 \cos^2 \alpha) = \frac{1}{\sqrt{1 + \tan^2 \alpha}} \left( \frac{\tan^2 \alpha}{1 + \tan^2 \alpha} - \frac{2}{1 + \tan^2 \alpha} \right) =$$

$$= \frac{1}{\sqrt{1 + \tan^2 \alpha}} \frac{\tan^2 \alpha - 2}{(1 + \tan^2 \alpha)^2} = \frac{\tan^2 \alpha - 2}{(1 + \tan^2 \alpha)^{5/2}}$$

