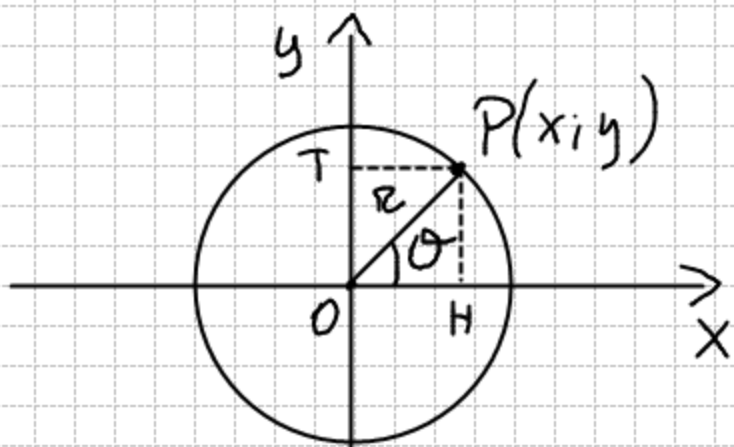


EQUAZIONI PARAMETRICHE DELLA CIRCONFERENZA

1/2



$$0 \leq \theta \leq 2\pi$$

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

equazione della circonferenza di raggio r e centro $C(0,0)$

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

$$x^2 + y^2 = r^2 (\sin^2 \theta + \cos^2 \theta)$$

$$\boxed{x^2 + y^2 = r^2}$$

eq. di una circonferenza di centro $C(0,0)$ e raggio r .

- se $C(x_0, y_0)$, equazione della circonferenza di raggio r e centro C

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

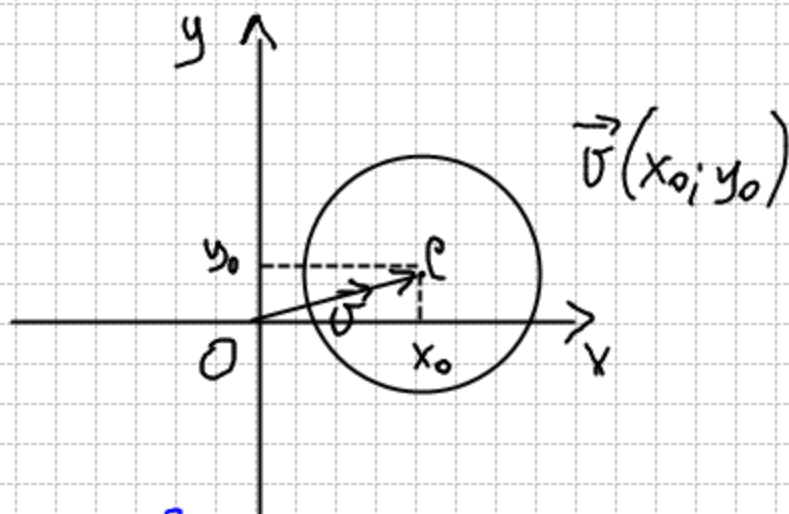
$$0 \leq \theta \leq 2\pi$$

$$(x - x_0)^2 + (y - y_0)^2 = r^2$$

$$\begin{cases} x - x_0 = r \cos \theta \\ y - y_0 = r \sin \theta \end{cases}$$

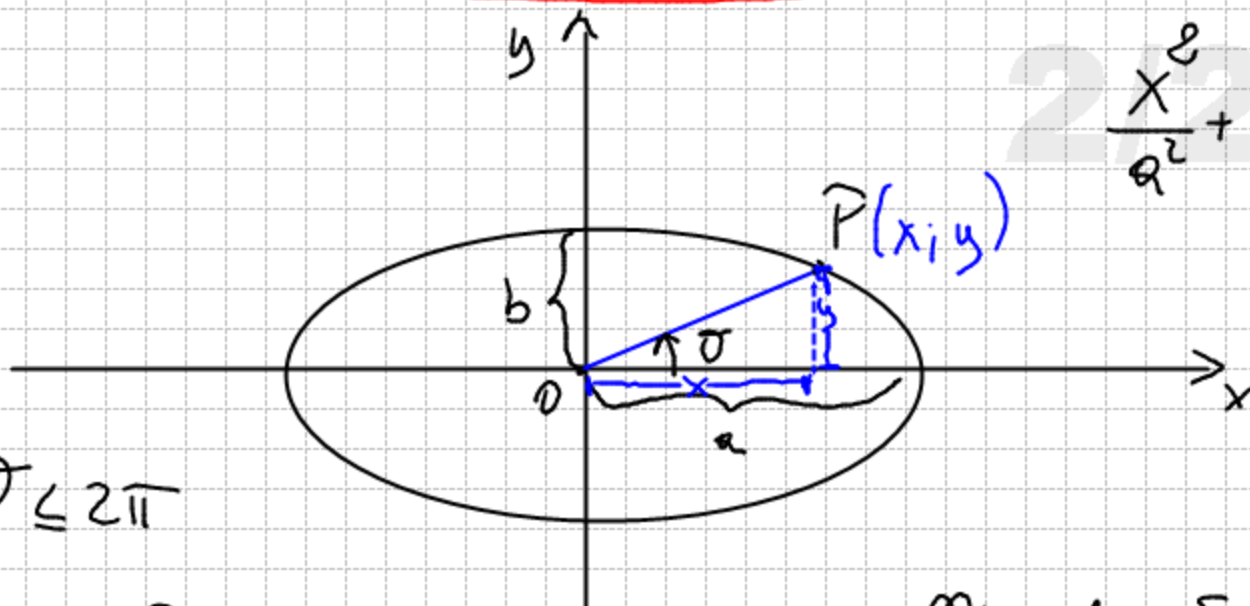
$$(x - x_0)^2 + (y - y_0)^2 = r^2 \cos^2 \theta + r^2 \sin^2 \theta$$

$$(x - x_0)^2 + (y - y_0)^2 = r^2 (\cos^2 \theta + \sin^2 \theta)$$



1

EQUAZIONE PARAMETRICA ELLISSE



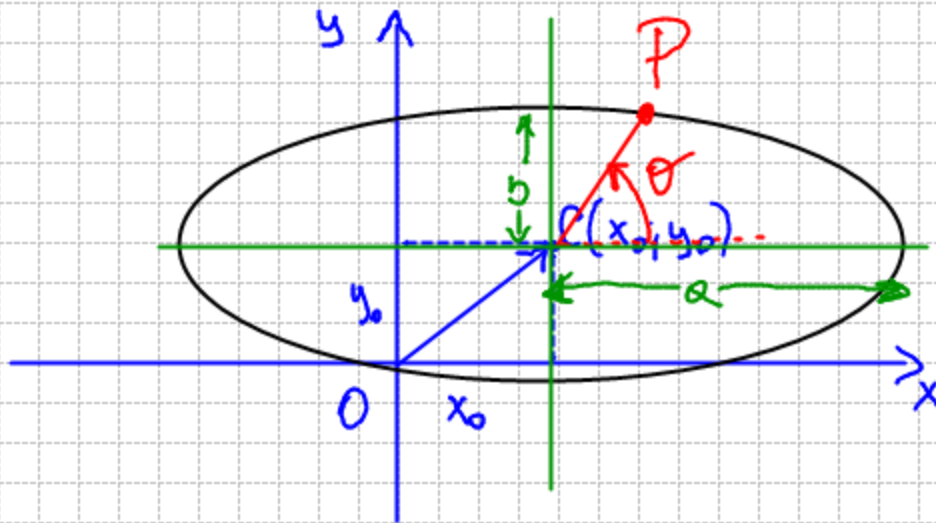
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$0 \leq \theta \leq 2\pi$$

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

equazione parametrica ellisse di centro $C(0;0)$

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



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

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

$$\sin^2 \theta + \cos^2 \theta = \left(\frac{y-y_0}{b}\right)^2 + \left(\frac{x-x_0}{a}\right)^2$$

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