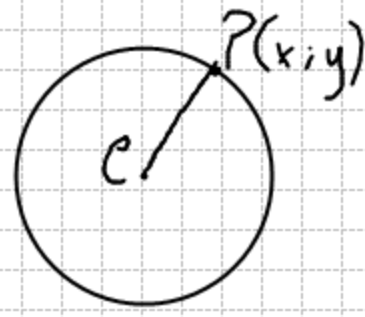


LA CIRCONFERENZA

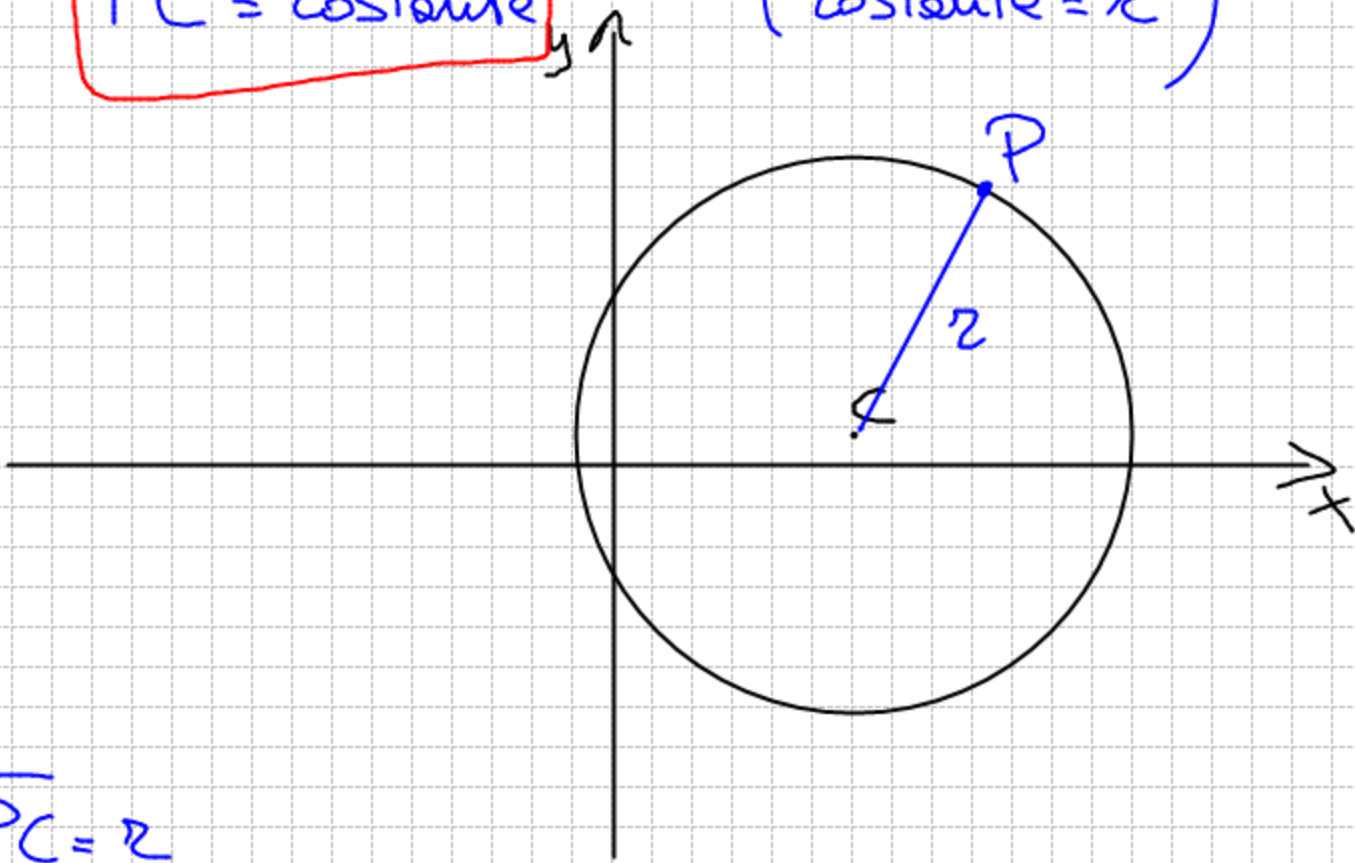
Df: la circonferenza è il luogo geometrico dei punti del piano per cui è costante la distanza da un punto fisso detto centro.

$$P(x; y); C(\alpha; \beta)$$



$$\overline{PC} = \text{costante}$$

$$(\text{costante} = r)$$



$$\overline{PC} = r$$

$$\sqrt{(x_p - x_c)^2 + (y_p - y_c)^2} = r$$

$$\sqrt{(x - \alpha)^2 + (y - \beta)^2} = r$$

$$(x - \alpha)^2 + (y - \beta)^2 = r^2$$

equazione circonferenza
di centro $C(\alpha; \beta)$ e raggio r .

$$x^2 - 2\alpha x + \alpha^2 + y^2 - 2\beta y + \beta^2 - r^2 = 0$$

pongo

$$\begin{cases} -2\alpha = a \\ -2\beta = b \\ \alpha^2 + \beta^2 - r^2 = c \end{cases}$$

$$x^2 + y^2 + ax + by + c = 0 \quad \text{con}$$

$$\alpha = -\frac{a}{2} \quad C\left(-\frac{a}{2}; -\frac{b}{2}\right)$$
$$\beta = -\frac{b}{2}$$

$$r = \sqrt{\left(-\frac{a}{2}\right)^2 + \left(-\frac{b}{2}\right)^2 - c}$$

ES

$$x^2 + y^2 + x + y - 1 = 0$$

$$C\left(-\frac{1}{2}; -\frac{1}{2}\right)$$

$$r = \sqrt{\frac{1}{4} + \frac{1}{4} + 1} = \sqrt{\frac{6}{4}} = \sqrt{\frac{3}{2}}$$

$$\left(x + \frac{1}{2}\right)^2 + \left(y + \frac{1}{2}\right)^2 = \frac{3}{2}$$

ES

$$x^2 + y^2 + 1 = 0 \quad C(0;0)$$

$$r = \sqrt{(0)^2 + (0)^2 - 1} = \sqrt{-1} \quad \cancel{\neq}$$

ES

$$C(1; -2) \quad r=5$$

$$(x-1)^2 + (y+2)^2 = 25$$

