$$x^2+y^2-4x+2y=0$$

$$P(-2;-3) \qquad \begin{cases} \bar{x}=-x-4 \\ \bar{y}=-y-6 \end{cases}$$

$$x^2+y^2-8=0 \Rightarrow x^2+y^2-4x-4y-1=0$$

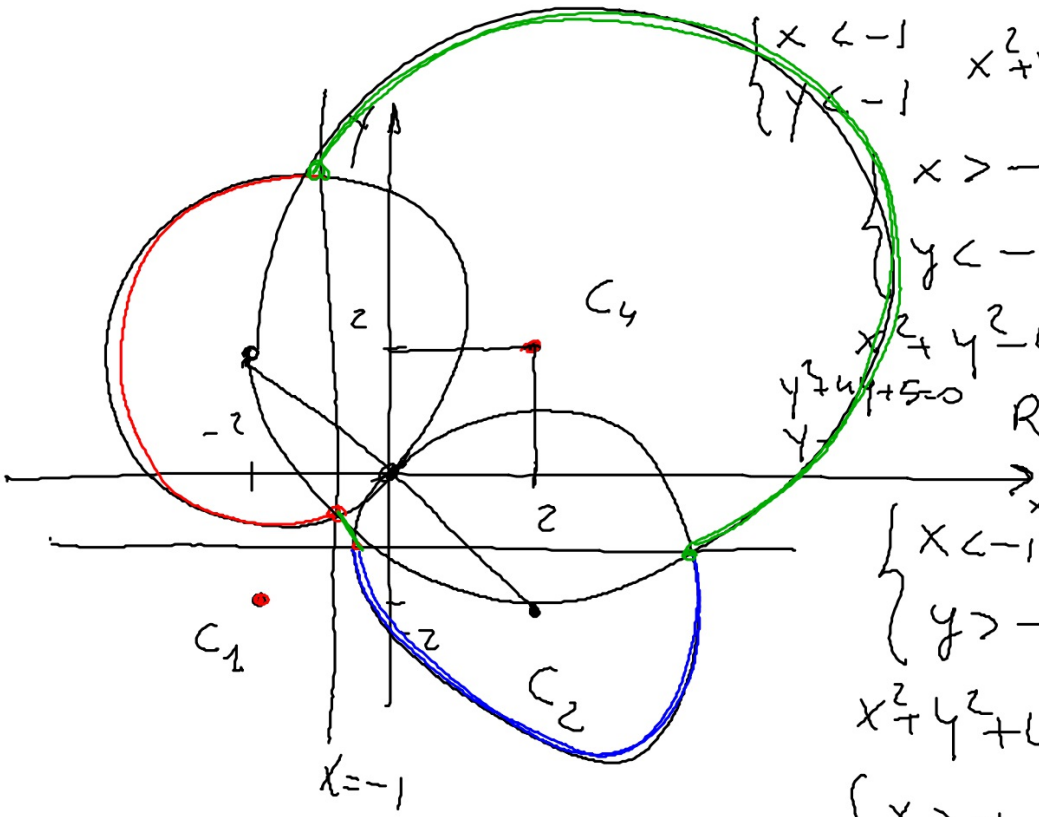
$$\begin{cases} \bar{x}=x+a \\ \bar{y}=y+b \end{cases} \Rightarrow \begin{cases} x=\bar{x}-a \\ y=\bar{y}-b \end{cases}$$

$$(\bar{x}-a)^2+(\bar{y}-b)^2=9$$

$$\bar{x}^2+a^2-2a\bar{x}+\bar{y}^2+b^2-2b\bar{y}-9=0$$

$$\bar{x}^2+\bar{y}^2-2a\bar{x}-2b\bar{y}+\boxed{a^2+b^2-9}=0$$

$$\begin{cases} -2a=-4 \\ -2b=-4 \end{cases} \qquad \begin{cases} a=2 \\ b=2 \end{cases}$$



$\begin{cases} x < -1 \\ y < -1 \end{cases}$ $x^2+y^2+4x+4y$

$x > -1$

$y < -1$ $C_2(2;-$

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

$y^2+4y+5=0$

$y=$

$R=\sqrt{8}$

$\begin{cases} x < -1 \\ y > -1 \end{cases}$ $C_3(-2;$

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

$\begin{cases} x > -1 \\ y > -1 \end{cases}$ x^2+y^2-4x-4

$C_4(2;2)$ $-8=$

$$y - y_0 = m(x - x_0)$$

$$y = y_0$$

$$x = x_0 \leftarrow m = \infty$$

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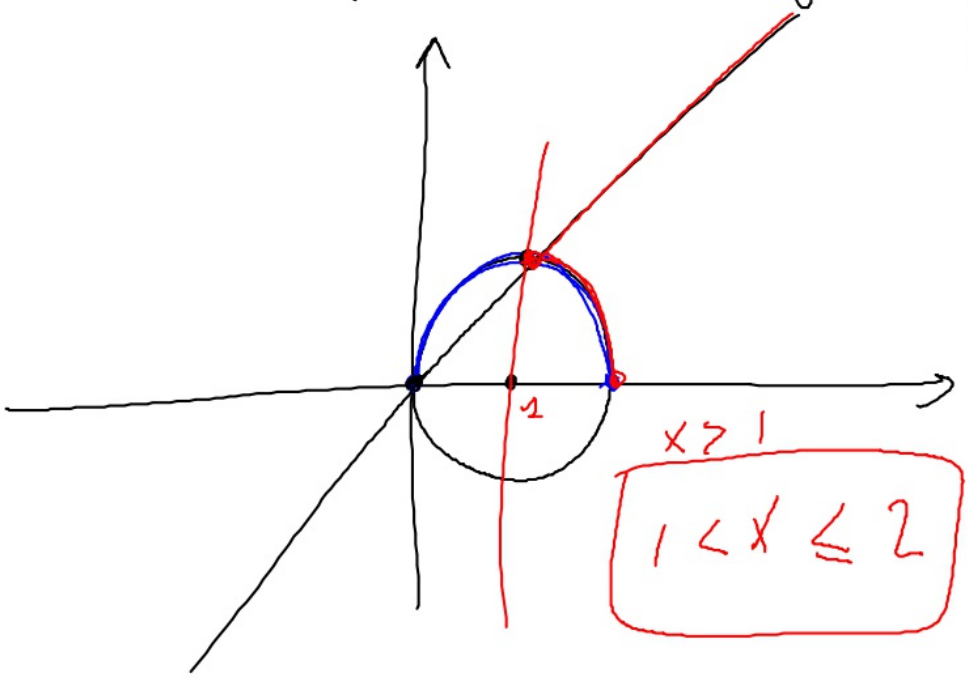
$$\sqrt{-x^2+2x} < x$$

$$y = \sqrt{-x^2+2x} \qquad \begin{cases} y^2 = -x^2+2x \\ y \geq 0 \end{cases} \qquad \begin{cases} x^2+y^2-2x=0 \\ \end{cases}$$

$$y = x$$

$(1;0)$



$x > 1$

$$\boxed{1 < x \leq 2}$$

$C(\alpha;\beta) \qquad R$

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

$C(1;1) \qquad R=1$

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

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

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

$\alpha=-\frac{a}{2} \Rightarrow a=-2\alpha$

$\beta=-\frac{b}{2} \Rightarrow b=-2\alpha$

$R=\sqrt{\alpha^2+\beta^2-c}$

$R^2-\alpha^2-\beta^2=-c$

$c=\alpha^2+\beta^2-R^2$

$A(2;0) \qquad B(-1;1)$

$C \in y=-x \qquad x^2+y^2+ax+by+c=0$

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

$-\frac{b}{\cancel{2}}=\frac{a}{\cancel{2}} \qquad a=-b$