

# DISEGNARE

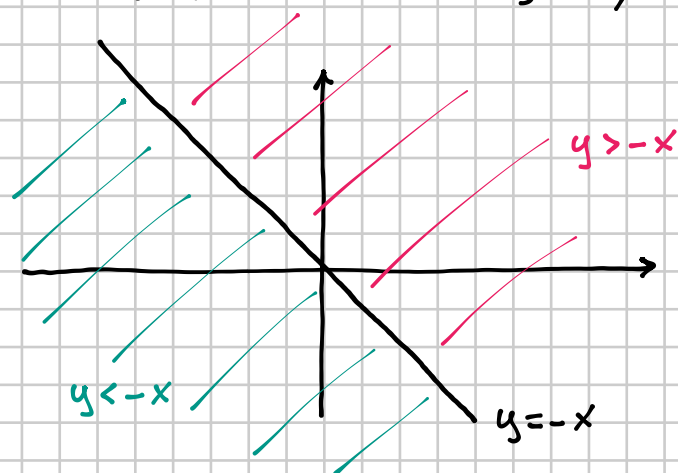
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$$x^2 + y^2 - 2|x + y| - 2 = 0$$

$$|x+y| = \begin{cases} x+y & \text{se } x+y \geq 0, \text{ cioè se } y \geq -x \\ -(x+y) & \text{se } x+y < 0, \text{ cioè se } y < -x \end{cases}$$

SEMIPIANO SUPERIORE  
DI BORDO  $y = -x$   
(BORDO COMPRESO)

SEMIPIANO INFERIORE  
DI BORDO  $y = -x$   
(BORDO ESCLUSO)



$$\begin{cases} x^2 + y^2 - 2(x+y) - 2 = 0 & \text{se } y \geq -x \\ x^2 + y^2 + 2(x+y) - 2 = 0 & \text{se } y < -x \end{cases}$$

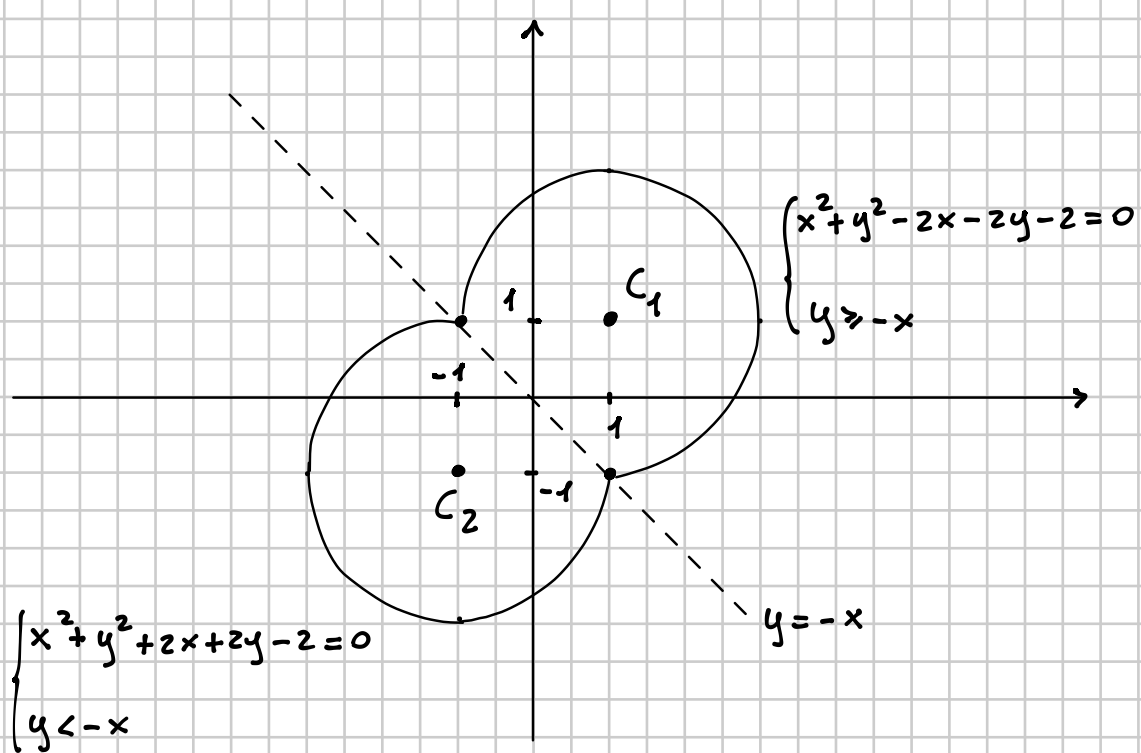
$$\begin{aligned} \textcircled{1} & \begin{cases} x^2 + y^2 - 2x - 2y - 2 = 0 & \text{se } y \geq -x \end{cases} \\ \textcircled{2} & \begin{cases} x^2 + y^2 + 2x + 2y - 2 = 0 & \text{se } y < -x \end{cases} \end{aligned}$$

$$\textcircled{1} \quad x^2 + y^2 - 2x - 2y - 2 = 0$$

$$C_1(1, 1) \quad r_1 = \sqrt{1^2 + 1^2 + 2} = 2$$

$$\textcircled{2} \quad x^2 + y^2 + 2x + 2y - 2 = 0$$

$$C_2(-1, -1) \quad r_2 = \sqrt{(-1)^2 + (-1)^2 + 2} = 2$$



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$$y = \sqrt{4x - x^2 + 5}$$

$$y \geq 0$$

↙ eleva al quadrato

$$y^2 = 4x - x^2 + 5$$

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

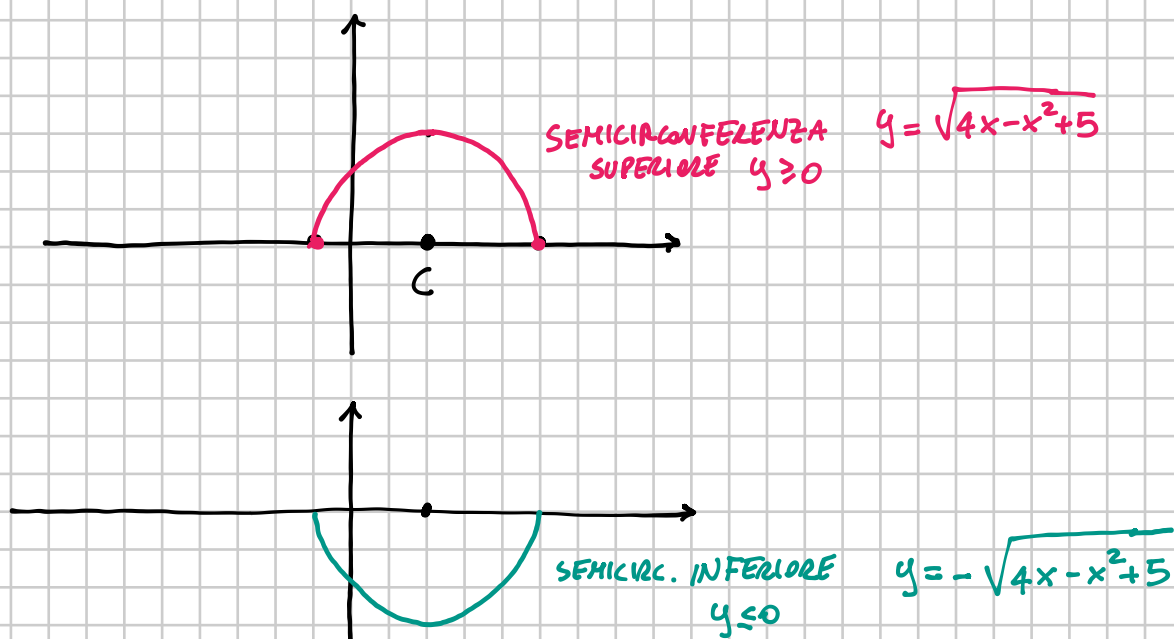
$$C(2, 0) \quad r = \sqrt{4 + 5} = 3$$

$$\text{C.E. } 4x - x^2 + 5 \geq 0$$

$$x^2 - 4x - 5 \leq 0$$

$$\frac{\Delta}{4} = 4 + 5 = 9 \quad x = 2 \pm 3 = \begin{matrix} 5 \\ -1 \end{matrix}$$

$$-1 \leq x \leq 5$$



$$y = 1 + \sqrt{2x - x^2}$$

$$y - 1 = \sqrt{2x - x^2}$$

$\Downarrow$  elevo al quadrato

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

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

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

$$C(1,1) \quad r = \sqrt{1^2 + 1^2 - 1} = 1$$

$$y - 1 \geq 0 \Rightarrow y \geq 1$$

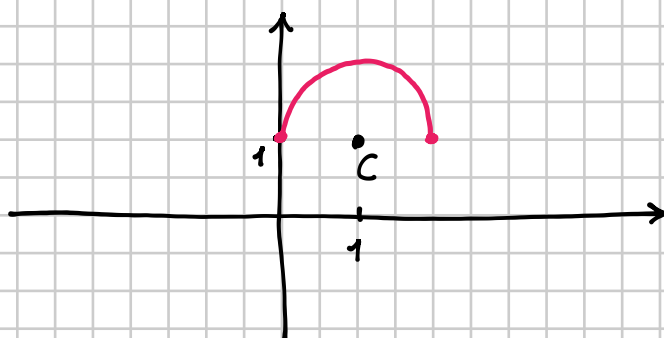
SEMI CIRCONFERENZA  
SUPERIORE

$$C.E. \quad 2x - x^2 \geq 0$$

$$x^2 - 2x \leq 0$$

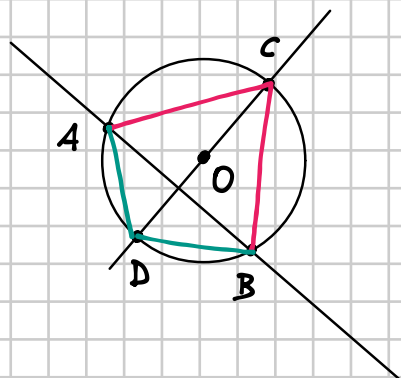
$$x(x-2) \leq 0$$

$$0 \leq x \leq 2$$



Trova le coordinate dei vertici  $C$  e  $D$  dei due triangoli isosceli inscritti nella circonferenza di equazione  $x^2 + y^2 - 8y + 11 = 0$  che hanno la base  $AB$  sulla retta di equazione  $y = -2x + 5$ .

$[C(-2; 3), D(2; 5)]$



$O(0, 4)$  CENTRO

retta  $CD$   $y - 4 = \frac{1}{2}(x - 0)$

perpendicolare  
per  $O$  alla  
retta data

$$y = \frac{1}{2}x + 4$$

$$\begin{cases} x^2 + y^2 - 8y + 11 = 0 \\ y = \frac{1}{2}x + 4 \end{cases}$$

$$x^2 + \left(\frac{1}{2}x + 4\right)^2 - 8\left(\frac{1}{2}x + 4\right) + 11 = 0$$

$$x^2 + \frac{1}{4}x^2 + 16 + 4x - 4x - 32 + 11 = 0$$

$$\frac{5}{4}x^2 - 5 = 0 \quad x^2 = 4 \quad x = \pm 2$$

$$\begin{cases} x = -2 \\ y = 3 \end{cases} \quad \vee \quad \begin{cases} x = 2 \\ y = 5 \end{cases}$$

$$C(-2, 3) \quad D(2, 5)$$