

COMPRESS (2)

$$\frac{101}{x^2} - \underbrace{x}_{-5-5i} = 0$$

$$x_{1,2} = \frac{1 \pm \sqrt{1 - 4(-5-5i)}}{2}$$

$$= \frac{1 \pm \sqrt{(5+2i)^2}}{2}$$

$$= \frac{1 \pm \sqrt{21+20i}}{2}$$

$$x_1 = \frac{1+5+2i}{2} = \frac{6+2i}{2} = 3+i$$

$$x_2 = \frac{1-5-2i}{2} = \frac{-4-2i}{2} = -2-i$$

SCOMPAGNAMENTO IN UN BINOMIO → COL QUADRATO

$$21+20i = 1+20+20i = 1+5-5+20+20i =$$

$$= 25-4+20i = (5+2i)^2$$

es2 $z |z| - 2z - 1 = 0$

$z = x + iy$

$(x + iy) \sqrt{x^2 + y^2} - 2(x + iy) - 1 = 0$

Reale

$\underbrace{\left[x \sqrt{x^2 + y^2} - 2x - 1 \right]}_{\text{Re}} + i \underbrace{\left[y \sqrt{x^2 + y^2} - 2y \right]}_{\text{Im}} = 0$

Re $= 0 \quad \left\{ \begin{array}{l} x \sqrt{x^2 + y^2} - 2x - 1 = 0 \end{array} \right.$

Im $= 0 \quad \left\{ \begin{array}{l} \underline{y} \sqrt{x^2 + y^2} - 2\underline{y} = 0 \end{array} \right.$

$$\begin{cases} x \sqrt{x^2 + y^2} - 2x - 1 = 0 \\ y (\sqrt{x^2 + y^2} - 2) = 0 \end{cases}$$

[legge di annullamento del prodotto]

$$\begin{cases} y = 0 \\ x \sqrt{x^2} - 2x - 1 = 0 \end{cases} \quad \cup \quad \begin{cases} \sqrt{x^2 + y^2} - 2 = 0 \rightarrow \sqrt{x^2 + y^2} = 2 \\ x \cdot 2 - 2x - 1 = 0 \end{cases}$$

$$\downarrow$$

$$0x = 1 \quad \text{IMPOSSIBILE}$$

$$\begin{cases} y = 0 \\ x|x| - 2x - 1 = 0 \end{cases}$$

1°

$$\begin{cases} y = 0 \\ x \geq 0 \\ x^2 - 2x - 1 = 0 \end{cases}$$

$$x_{1,2} = \frac{2 \pm \sqrt{4+4}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = \begin{cases} 1 + \sqrt{2} \\ 1 - \sqrt{2} \end{cases}$$

II

$$\begin{cases} y = 0 \\ x < 0 \\ x(-x) - 2x - 1 = 0 \end{cases}$$

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

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

$$(x+1)^2 = 0$$

$$x = -1$$

I°

$$\begin{cases} y = 0 \\ x \geq 0 \\ x_1 = 1 + \sqrt{2} \quad / \quad x_2 = 1 - \sqrt{2} < 0 \end{cases}$$

N.A.

$$(1 + \sqrt{2}; 0)$$

$$x_1 = 1 + \sqrt{2}$$

II°

$$\begin{cases} y = 0 \\ x < 0 \\ x = -1 \end{cases} \quad (-1, 0)$$

$$x_2 = -1$$

es 4

determinare i punti del piano di Gauss soddisfacenti la condizione:

$$|z| < 1$$

$$z = x + iy$$

$$\sqrt{x^2 + y^2} < 1$$

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

$$|z| = 1$$

circonferenza

circonferenza $c(0,0)$ $R=1$



parte interna delle circonferenze
di raggio 1

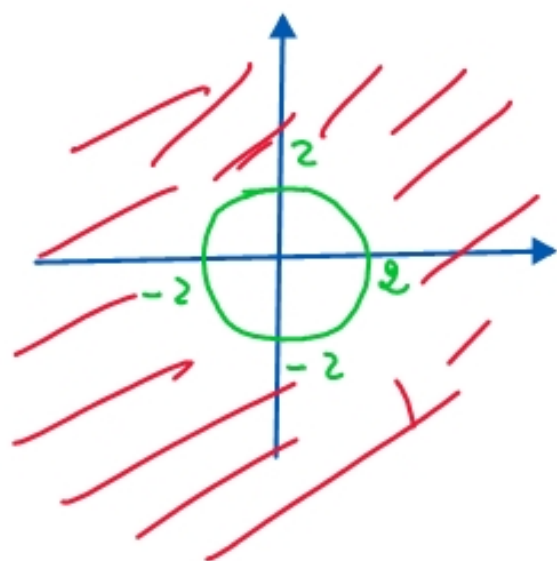
$$\sqrt{x^2 + y^2} < 1$$

$$|z| \geq 2$$

$$\sqrt{x^2 + y^2} \geq 2$$

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

$$\text{cfr. } (0,0) \quad R=2$$



parte esterna, compreso
la circonferenza

Tra basculando la zona di
piano interna