Nombres complexes.

$\mathbb{C}$

Forme algébrique

$Z = a + ib$

si $a = 0 \Rightarrow Z$ img pur

$b = 0 \Rightarrow Z$ réel.

a = réel

ib = img pur

A et B $\in \mathbb{R}$

forme trigo

$r(\cos\theta + i\sin\theta)$

$r = |Z|$ module

$\theta = \arg Z$

$\left|\frac{Z}{Z'}\right| = \frac{|Z|}{|Z'|}$

$|ZZ'| = |Z| \times |Z'|$

$\frac{\arg z'}{\arg z} = \frac{\arg z'}{\arg z}$

$\arg zz' = \arg z + \arg z'$

$\arg Z$ $\angle\theta$

$r = |a + ib| = \sqrt{a^2 + b^2}$

ensemble de points

$|Z - Z_A| = |Z - Z_B|$

$0A = |z_A - z_0|$

$AM = MB$

$\in$ des pts de la médiatrice B.

Ensemble des points $M \in$ au cercle si les pts du ceintre ω on un module =

forme expo.

$|e^{i\theta}| = 1$

$e^{i\theta} \times e^{i\theta'} = e^{i(\theta + \theta')}$

$\frac{e^{i\theta}}{e^{i\theta'}} = e^{i(\theta - \theta')}$

$(e^{i\theta})^n = e^{in\theta}$

$\overline{e^{i\theta}} = e^{-i\theta}$

$Z = a + ib$

Δ

$\Delta > 0.$

$x_1 = \frac{-b - \sqrt{\Delta}}{2a}$

$x_2 = \frac{-b + \sqrt{\Delta}}{2a}$

$\Delta < 0$

$x_1 = \frac{-b - i\sqrt{-\Delta}}{2a}$

$x_2 = \frac{-b + i\sqrt{-\Delta}}{2a}$

$\Delta = 0$

$x = -\frac{b}{2a}$

le conjugué

$Z' = a - ib$

$|Z|^2 = a^2 + b^2 = Z\bar{Z}$

$Z - \bar{Z} = 2i\,Im(Z)$

$Z + \bar{Z} = 2Re(Z)$

$Z = re^{i\theta}$

$Z' = r'e^{i\theta'}$

$ZZ' = rr'e^{i(\theta + \theta')}$

$\frac{Z}{Z'} = \frac{r}{r'}e^{i(\theta - \theta')}$

$Z^n = r^n e^{in\theta}$