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1) $z \cdot \bar{z} = x^2 + y^2 \rightarrow$ Real

2) $\omega = \frac{-1+\sqrt{3}i}{2}$ $\quad \omega^2 = \bar{\omega} = \frac{-1-\sqrt{3}i}{2}$

3) $a\bar{\omega} + b\bar{\omega}^2 + c = a\omega^2 + b\omega + c$

⊙ MODULUS OF A COMPLEX NO.

$z = x + iy$

$|z|^2 = z \cdot \bar{z} = (x+iy)(x-iy) = x^2 + y^2$

$|z| = \sqrt{x^2+y^2}$

⊙ ARGUMENT OF A COMPLEX NO-

$\underline{arg}(z) \rightarrow \pi/3, -\pi/3, \ldots$ {principal value}

$Arg(z) = 2n\pi + \pi/3$ {general value}

$arg(z)$ b/w 0 and π

$arg(z_1 \cdot z_2) = arg\, z_1 + arg\, z_2$

⊙ TRIANGLE INEQUALITY

$|z_1| + |z_2| \geq |z_1 \pm z_2|$ (- sign for adjustment)

eg- $2+i - (3-i)$

$\rightarrow 2+i+(-3+i)$

$|z_1| - |z_2| \leq |z_1 \pm z_2|$

$z + \bar{z} = 2\,Re(z)$

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