Contents

0.1 Arithmetic of polar coordinates

Addition

$z_3 = z_1 + z_2$

$z_3 = a_1 e^{i\theta_1} + a_2 e^{i\theta_2}$

$z_3 = a_1[\cos(\theta_1) + i\sin(\theta_1)] + a_2[\cos(\theta_2) + i\sin(\theta_2)]$

$z_3 = [a_1\cos(\theta_1) + a_2\cos(\theta_2)] + i[a_1\sin(\theta_1) + a_2\sin(\theta_2)]$

Multiplication

$z_3 = z_1.z_2$

$z_3 = a_1 e^{i\theta_1} a_2 e^{i\theta_2}$

$z_3 = a_1 a_2 e^{i(\theta_1+\theta_2)}$

$a_3 = a_1 a_2$

$\theta_3 = \theta_1 + \theta_2$