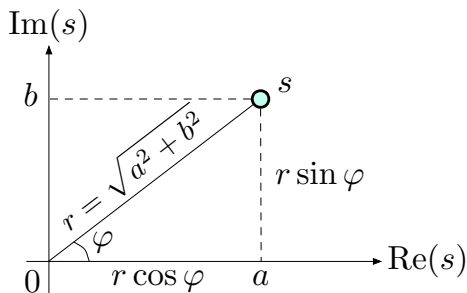


Review: Complex Numbers

$$s = \underbrace{a}_{\substack{\text{real} \\ \text{part}}} + j \underbrace{b}_{\substack{\text{imaginary} \\ \text{part}}}$$

— rectangular form



Polar form:

$$s = r e^{j\varphi}$$

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

(magnitude)

$$\varphi = \angle s = \tan^{-1} \left(\frac{b}{a} \right)$$

(phase)

Euler's formula: $e^{j\varphi} = \cos \varphi + j \sin \varphi$