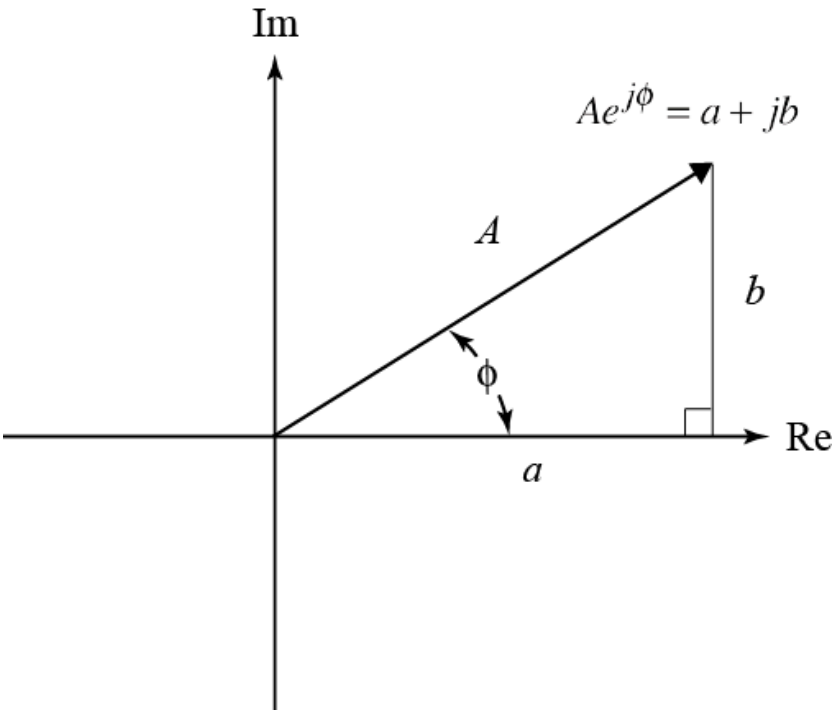
SUMMARY: The phasor transform represents a sinusoid as a complex number.

$$P[A\cos(2\pi ft+\phi)] = Ae^{j\phi} = a + jb$$

or

$$A\cos(2\pi ft+\phi) \xleftrightarrow{P[\,]} Ae^{j\phi} = a + jb$$

A right triangle diagram captures the conversion of complex numbers from rectangular to polar form and vice versa.



Polar Form	Rectangular Form
$A = \sqrt{a^2 + b^2}$	$a = A\cos\phi$
$\phi = \tan^{-1}\left(\frac{b}{a}\right)$	$b = A\sin\phi$