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## Complex Number Representations

<i>Format</i>	<i>Rectangular</i>	<i>Trigonometric</i>	<i>Polar</i>
<i>Complex Number</i>	$a + bi$	$(r \angle \theta)$	$re^{i\theta}$
<i>Angle Modes</i>	Degree/Radian	Degree/Radian	Radian Only

If the *Complex Format* is:

*Real* – will not display complex results unless

- i) complex number is in the input
- ii) using a built-in complex function (cSolve)

*Rectangular* – complex results displayed as  $a + bi$

*Polar* – complex results displayed as:

Degree angle mode returns –  $(r \angle \theta)$

Radian angle mode returns –  $re^{i\theta}$

## Complex Number Form Conversions

$z \rightarrow \text{Polar}$  – Degree angle mode returns  $(r \angle \theta)$

Radian angle mode returns  $re^{i\theta}$

$z \rightarrow \text{Rect}$  – returns  $a + bi$

*or*

$\text{PRx}(r, \theta) \rightarrow x$

$\text{PRy}(r, \theta) \rightarrow y$

$\text{PR}^{-1}(x, y) \rightarrow \theta$

$\text{PRr}(x, y) \rightarrow r$

*or*

$\text{abs}(z) \rightarrow r$

$\text{angle}(z) \rightarrow \theta$

*or*

Change *Complex Format display* MODE and redisplay complex number.