

Chapter 8 / **Example 8****Converting complex number forms**

- a** Write the complex number $2 + 3i$ in modulus argument form.
b Find in the form $a + bi$ the complex numbers with the following modulus (r) and argument (θ) values.
- i** $r = 3, \theta = 0.4$ **ii** $r = 5, \theta = 3.4$

Open a new document and add a Calculator page.

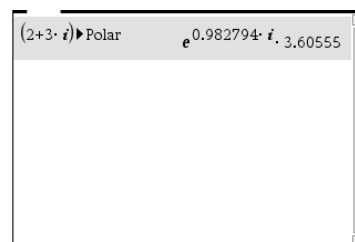
The TI-Nspire will find polar form directly.

Type $2 + 3i$.

To enter i press $\boxed{\pi}$ and select i from the menu.

Press $\boxed{\text{menu}}$ 2: Number | 9: Complex Number Tools | 6: Convert to Polar and press $\boxed{\text{enter}}$.

$$2 + 3i = e^{0.983i} \cdot 3.61 = 3.61 \text{cis} 0.983.$$



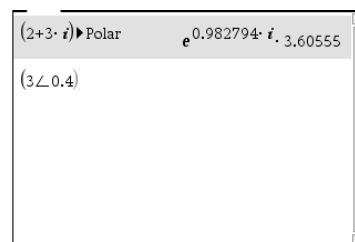
Complex numbers can be entered in polar form.

Open parentheses and type 3.

Press $\boxed{\text{ctrl}}$ $\boxed{\text{angle}}$ $\boxed{\text{angle}}$ and select \angle .

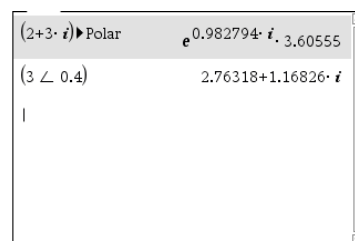
Type 0.4 and close the parentheses.

Press $\boxed{\text{enter}}$.



Since the default format of complex numbers is Cartesian, the GDC converts from polar to Cartesian without needing to enter any additional command.

$$3 \text{cis} 0.4 = 2.76 + 1.17i$$



Type $(5 \angle 3.4)$ and press $\boxed{\text{enter}}$.

$$5 \text{cis} 3.4 = -4.83 - 1.28i.$$

