

Check that basic settings shown at the bottom of the screen are

Standard Cplx Rad

Use the **Math2** keyboard to enter the complex number $1 + \sqrt{3}i$ and tap **EXE**.

The magnitude can be found using the $| \cdot |$ template.

The screen shows the ClassPad II interface. The top menu bar includes 'Edit', 'Action', 'Interactive', 'Transformation', 'Advanced', 'Calculation', 'Complex', 'arg', 'List', 'Matrix', 'Vector', 'Equation/Inequalities', 'Assistant', 'Distribution/Inv', 'Financial', and 'Command'. The bottom menu bar includes 'Line', 'Math1', 'Math2', 'Math3', 'Trig', 'Var', 'abc', 'Alg', 'Standard', 'Cplx', 'Rad', and 'EXE'. The main display shows the input $1 + \sqrt{3}i$ and its magnitude $|1 + \sqrt{3}i|$ which is calculated as 2.

Other useful tools can be found in the **Action, Complex** menu.

The screen shows the Action menu with 'Complex' and 'arg' selected. The main display shows the input $1 + \sqrt{3}i$ and the result $\arg(1 + \sqrt{3}i)$ which is calculated as $\frac{\pi}{3}$.

Tap **Action, Complex, arg** to find the argument.

The screen shows the input $1 + \sqrt{3}i$ and the result $\arg(1 + \sqrt{3}i)$ which is calculated as $\frac{\pi}{3}$.

Try some of the other functions in the Complex menu such as the conjugate, real part and imaginary part.

Notice that Classpad does not automatically expand a power of a complex number.

The screen shows the input $(1 + \sqrt{3}i)^4$ and the result $(1 + \sqrt{3}i)^4$ which is calculated as 16.

We can use **cExpand** to simplify a power.

ClassPad will help with conversions into most forms of complex numbers - use the Action, Complex menu.

These forms usually make the magnitude and argument of a complex number very obvious.

The screen shows the input $(1+\sqrt{3}\cdot i)^4$ and the output $-8-8\sqrt{3}\cdot i$. The **cExpand** command is used to simplify the power.

The Action menu is open, and the Complex submenu is selected. The submenu includes options like arg, conjg, re, im, cExpand, compToTrig, compToPol, and compToRect.

The screen shows the input $(1+\sqrt{3}\cdot i)^4$ and the output $-8-8\sqrt{3}\cdot i$. The **cExpand** and **compToTrig** commands are used to simplify the expression.

The screen shows the input $(1+\sqrt{3}\cdot i)^4$ and the output $16\cdot e^{\pi\cdot -\frac{2}{3}i}$. The **cExpand** and **compToTrig** commands are used to simplify the expression into its polar form.