Chapter 3 / **Example 29**

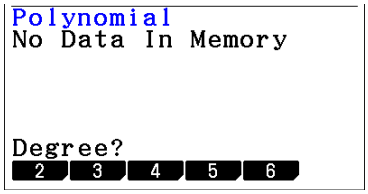
Finding complex roots of a polynomial

Given that $1+3i$ is a complex zero of the polynomial $f(x)=x^3-5x^2+16x-30$, find all the other zeros of f.
Check your answers using a calculator.

Press [MENU] A [EQUA] to enter equation mode.

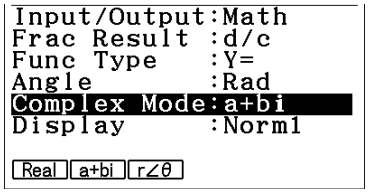
Press [F2] Polynomial.

Press [F2] 3 since the polynomial is degree 3.

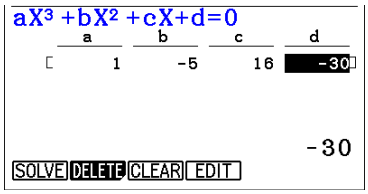


Press [SHIFT] [MENU] SET UP.

Scroll down to Complex Mode with ▼ and use [F2] to set this to a+bi. Press [EXIT] to return to the polynomial screen.



Enter the coefficients: 1, -5, 16 and -30.



Press [F1] SOLVE.

The calculator shows the roots: 3, $1+3i$ and $1-3i$.