

Chapter 3 / **Example 27**

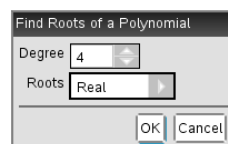
Using the roots of a polynomial to factorise

Express the polynomial $f(x) = x^4 - 6x^3 - 19x^2 + 24x$ as a product of linear factors, and check your answer by using your calculator.

Open a new document and add a Calculator page.

Press **menu** 3:Algebra | 3:Polynomial Tools | 1:Find Roots of Polynomial...

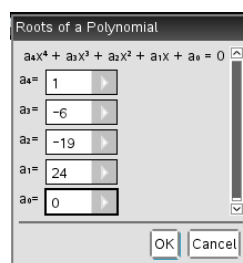
Select degree 4 and leave the roots as Real.



Enter the coefficients: 1, -6, -19, 24 and 0.

Click the touchpad on OK or press **enter**.

Press **enter**.



The calculator shows the roots: -3, 0, 1 and 8.

The factorization is: $f(x) = x(x-1)(x+3)(x-8)$.

