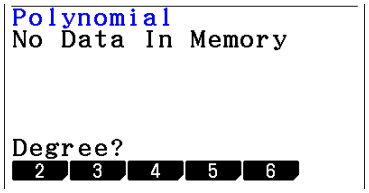
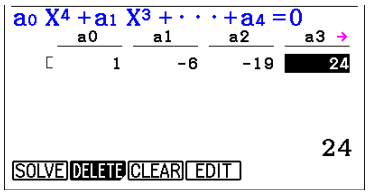
Chapter 3 / **Example 27**

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.

Press MENU A to enter equation mode. Press F2 Polynomial. Press F3 4 since the polynomial is degree 4.	
Enter the coefficients: 1, -6, -19, 24 and 0.	
Press F1 SOLVE. The calculator shows the roots: 8, -3, 1 and 0. The factorization is: $f(x)=x(x-1)(x+3)(x-8)$.