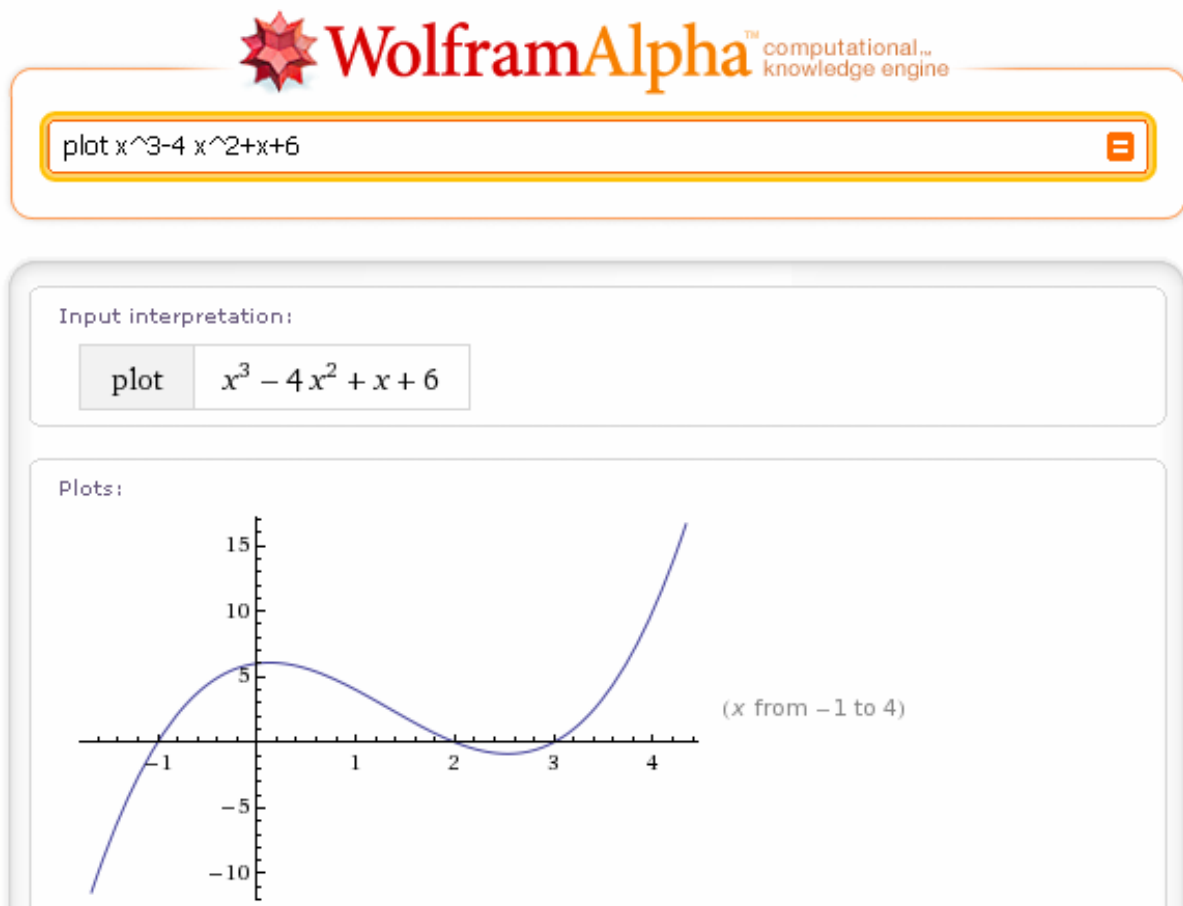


## Concept Connection : Real Zeros, x-intercepts and Factors

Use Wolfram Alpha ([www.wolframalpha.com](http://www.wolframalpha.com)) to plot  $x^3 - 4x^2 + x + 6$  and then answer the questions following the graph.



1. What are the zeros of  $f(x) = x^3 - 4x^2 + x + 6$ ?
2. What are the x-intercepts of the graph of the function  $f(x) = x^3 - 4x^2 + x + 6$ ?
3. Use the zeros in part (1) to factor  $x^3 - 4x^2 + x + 6$ .
4. Explain the connection between the real zeros, x-intercepts, and factors of this polynomial.
5. Use Wolfram Alpha to plot the graph of  $f(x) = x^3 - 3x^2 + 4$ . Answer parts (1)-(4) again for this function.