

Linear Factorization of Polynomials

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Find all the zeros of the function and write the polynomial as a product of linear factors.

1. $f(x) = x^4 - x^3 - 5x^2 + 3x + 6$.

2. $f(x) = x^4 + x^3 - 11x^2 - 5x + 30$.

3. $f(x) = x^4 + x^3 - 8x^2 + 2x + 4.$

4. $f(x) = x^3 - x^2 + x - 1.$

5. $\star f(x) = x^5 - 3x^4 + 4x^3 - 4x^2 + 3x - 1.$