

Fun with Polynomials

1. Estimate the zeros (x-intercepts) of the function $x^4 - 3x^3 + 5$ to four decimal places.
2. Estimate the zeros of the function $25x^3 - 40x^2 - 99x + 162$ to four decimal places.
3. Give a symbolic representation of a polynomial with x-intercepts at -3, 4, and 5.
4. Give a symbolic representation of a polynomial with x-intercepts at -3, 4, and 5 and a y-intercept at 6.
5. Give a symbolic representation of a polynomial with x-intercepts at -3, 4, and 5 and a y-intercept at -30.
6. Give a symbolic representation of a fourth degree polynomial with only these three x-intercepts: -3, 4, and 5 and a y-intercept at 10.
7. What is the domain of $\sqrt{\frac{x-3}{x+2}}$.