Higher Degree Equations
Rational Root Theorem

Factor if Possible

1. $(x - 5)(x + 2)(x + 8) = 0$

2. $(x - 2)(x + 3)(x + 10) = 0$

3. $(x + 1)(2x - 1)(x - 5)$

If p and q are integers such the p/q is in lowest terms

The rational root theorem says that if you take all the factors of the constant term, p, in a polynomial and divide by all the factors of the leading coefficient, q, you produce a list of all the possible rational roots of the polynomial.

Use Synthetic Substitution

1. $x^3 + 8x^2 + 9x - 18 = 0$ -6

2. $-x^3 + 4x - 15 = 0$ -3