Rational Roots (C)

Suppose that all the coefficients of a polynomial $p(z)$ are integers. If m and n are integers with no common factors and $p(m/n) = 0$ then m divides the constant term in p and n divides the leading coeficient.

Observe that every polynomial with rational coeffients is a polynomial with integer coefficients divided by a fixed integer, namely the least common multiple of its coefficients.

Exercises List all the possible rational roots of

1.

$z^9 + 6z + 6$;

2.

$z^12 - 44z^3 - 12$;

3.

$4z^4 + 9z - 2$;

4.

$(4/3)z^9 + 6z^2 + 11$;