

Quiz – Roots of polynomials

name:

[1] Consider the polynomial $f(x) = 2x^3 - 7x^2 + 16x - 15$. The roots of this polynomial are x_1 , x_2 , and x_3

[a] Without solving, find the value of $x_1^2 + x_2^2 + x_3^2$

[b] List the possible linear factors: _____

[c] Factor the polynomial and state its roots.

[2] Consider the polynomial $f(x) = 3x^4 - 8x^3 + 33x^2 - 18x - 10$. The roots of this polynomial are x_1 , x_2 , and x_3

[a] Without solving, find the value of $x_1x_2x_3 + x_1x_2x_4 + x_1x_3x_4 + x_2x_3x_4$

[b] Without solving, find the value of $x_1^2 + x_2^2 + x_3^2 + x_4^2$

[c] List the possible linear factors: _____

[d] Factor the polynomial and state its roots.