

Advanced Higher Maths – Homework 1 – Partial Fractions and Algebraic Long Division

Write in a form that does not involve improper algebraic fractions:

(a) $\frac{x^2 - 3x + 8}{x - 6}$

(b) $\frac{3x^3 + 5x^2 + 19x - 3}{x^2 + 4}$

Express as partial fractions:

(a) $\frac{7x + 22}{(x + 6)(x - 4)}$

(b) $\frac{2x^2 - 11x - 29}{(x - 5)(x^2 + 9)}$

(c) $\frac{9x^2 + 45x + 58}{(x - 1)(x + 3)^2}$

(d) $\frac{2x^3 - 12x^2 - 15x - 25}{(x - 7)(x + 1)}$