1.5 Polynomials

Question Paper

Course	Edexcel IAL Maths: Pure 1
Section	1. Algebra & Functions
Topic	1.5 Polynomials
Difficulty	V. Hard

Time allowed: 30

Score: /22

Percentage: /100

Question 1

Expand and simplify

(i) $(x + 3)^2 + (x - 2)(2x + 4)$

(ii) $3x(8 - x)(3x - 3)$

(iii) $(p + 6)^4$

[5 marks]

Question 2

(a) Expand and simplify $(x + y)(x - y)(y - x)(-x - y)$.

[2 marks]

Question 2

(b) A cuboid has a length of $(2x - 3y + 3)$ units, a width of $(2x + 3y - 3)$ units, and a height of $(x - y)$ units. Find an expression for the volume of the cuboid in terms of x and y.

[2 marks]

Question 3

Given that $(ax + by)(2x + y)(x - 3y) = 8x^3 + cx^2y + dxy^2 - 9y^3$, where a, b, c and d are constants, find the values of a, b, c and d.

[3 marks]

Question 4

Factorise

(i) $12x^2 - 17x - 5$

(ii) $10x^3 + 55x^2 + 60x$

(iii) $15x^3 - 6x^2 - 9x$

[7 marks]

Question 5

Factorise completely $x^5y - xy^5$.

[3 marks]