Partial Fractions
Difficulty: Medium

Question Paper 1

Level	A Level
Subject	Maths Pure 3
Exam Board	CIE
Topic	Algebra
Sub-Topic	Partial fractions
Difficulty	Medium
Booklet	Question Paper 1

Time allowed: **43 minutes**

Score: **/31**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E
>90%	81%	70%	58%	46%	34%

Question 1

(a) Express $\frac{25}{x^2(2x+1)}$ in partial fractions.

(4)

(Total 4 marks)

Question 2

(ii) (a) Express $\frac{1}{x^2(1-3x)}$ in partial fractions.

(4)

(Total 4 marks)

Question 3

Express $\frac{9x^2 + 20x - 10}{(x + 2)(3x - 1)}$ in partial fractions.

(4)

(Total 4 marks)

Question 4

$$f(x) \equiv \frac{9x^2 + 25x + 16}{9x^2 - 16}$$

Show that f (x) can be written in the form $A + \frac{B}{3x - 4} + \frac{C}{3x + 4}$, where A, B and C are constants to be found.

(Total 7 marks)

Question 5

$$f(x) = \frac{x^4 + 2x^3 - 29x^2 - 47x + 77}{x^2 - 2x - 15}$$

Show that f (x) can be written as $Px^2 + Qx + R + \frac{V}{x+3} + \frac{W}{x-5}$ and find the values of P, Q, R, V and W.

(Total 7 marks)