

Partial Fractions

Difficulty: Easy

Question Paper 1

Level	A Level
Subject	Maths Pure 3
Exam Board	CIE
Topic	Algebra
Sub-Topic	Partial fractions
Difficulty	Easy
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 $\frac{2x-1}{(x-1)(2x-3)}$ in partial fractions.

(Total 3 marks)

Question 2

Show that $\frac{6(x+7)}{(5x-1)(2x+5)}$ can be written in the form $\frac{A}{5x-1} + \frac{B}{2x+5}$

Find the values of the constants A and B .

(5)

(Total 5 marks)

Question 3

$$f(x) = \frac{1+14x}{(1-x)(1+2x)}, \quad |x| < \frac{1}{2}.$$

- (a) Express $f(x)$ in partial fractions. (3)

(Total 3 marks)

Question 4

$$f(x) = \frac{4x^2 + x - 23}{(x-3)(4-x)(x+5)}, \quad x > 4.$$

Given that $f(x)$ can be expressed in the form $\frac{A}{x-3} + \frac{B}{4-x} + \frac{C}{x+5}$, find the values of A , B and C .

(Total 6 marks)

Question 5

Given that

$$\frac{11x - 1}{(1 - x)^2(2 + 3x)} = \frac{A}{(1 - x)^2} + \frac{B}{(1 - x)} + \frac{C}{(2 + 3x)},$$

(a) find the values of A , B and C .

(4)

(Total 4 marks)

Question 6

$$\frac{9x^2}{(x-1)^2(2x+1)} = \frac{A}{(x-1)} + \frac{B}{(x-1)^2} + \frac{C}{(2x+1)}$$

Find the values of the constants A , B and C .

(4)

(Total 4 marks)

Question 7

$$\frac{18x^2 - 98x + 78}{(x-4)^2(3x+1)} = \frac{A}{x-4} + \frac{B}{(x-4)^2} + \frac{C}{3x+1}, \quad x > 4$$

Find the values of the constants A , B and C .

(6)

(Total 6 marks)