Partial Fractions Exam Questions Sheet 2

Q1.

Express in partial fractions

$$\frac{5x+3}{(2x+1)(x+1)^2}$$

(4)

Total 4 marks)

Q2.

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

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

(4)

(Total 4 marks)

Q3.

Given that

$$\frac{3x^4 - 2x^3 - 5x^2 - 4}{x^2 - 4} \equiv ax^2 + bx + c + \frac{dx + e}{x^2 - 4}, \quad x \neq \pm 2$$

find the values of the constants *a*, *b*, *c*, *d* and *e*.

(4)

(Total 4 marks)

Q4.

$$\frac{2x^2+5x-10}{(x-1)(x+2)} \equiv A + \frac{B}{x-1} + \frac{C}{x+2}$$

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

(4)

(Total 4 marks)

Q5.

$$f(x) = \frac{4-2x}{(2x+1)(x+1)(x+3)} = \frac{A}{2x+1} + \frac{B}{x+1} + \frac{C}{x+3}$$

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

(4)

(Total 4 marks)

Q6.

$$\frac{1+11x-6x^2}{(x-3)(1-2x)} \equiv A + \frac{B}{(x-3)} + \frac{C}{(1-2x)}$$

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

(4)

(Total for question = 4 marks)

Q7.

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

(4)

(Total 4 marks)