Year 13 A Level Maths Homework 2 Exam Q's Due Date: _____ Name: _____ Score: /18

Answer all questions, make sure you show all working otherwise you will not be awarded marks. If you write on any other paper, please hand this in with the sheet.

Q1.

Express $\frac{6x+4}{9x^2-4} - \frac{2}{3x+1}$ as a single fraction in its simplest form.

(Total for question = 4 marks)

Q2.

The function f is defined by $f(x) = \frac{5x}{x^2+7x+12} + \frac{5x}{x+4} \quad x > 0$

(a) Show that $f(x) = \frac{5x}{x+3}$ (3)

(b) Find f^{-1} (3)

(Total for question = 6 marks)

Q3. $f(x) = 3 - \frac{x-2}{x+1} + \frac{5x+26}{2x^2-3x-5} \quad x > 4$

(a) Show that $f(x) = \frac{ax+b}{cx+d} \quad x > 4$

where a, b, c and d are integers to be found. (4)

(b) Hence find $f^{-1}(x)$ (2)

(c) Find the domain of f^{-1} (2)

(Total for question = 8 marks)