Air maths tuition

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Partial Fractions | Past Paper Question | C4 Edexcel January 2013 Q3

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

$$\frac{9x^2+20x-10}{(x+2)(3x-1)} \equiv 3 + \frac{5x-4}{(x+2)(3x-1)}$$

$$\equiv 3 + \frac{2}{x+2} - \frac{1}{3x-1}$$

$$\begin{array}{r} 3 \\ 3x^2+5x-2 \overline{\big) 9x^2+20x-10} \\ -\ 9x^2+15x-6 \\ \hline 5x-4 \end{array}$$

$$\frac{5x-4}{(x+2)(3x-1)} \equiv \frac{A}{x+2} + \frac{B}{3x-1}$$

$$\therefore 5x-4 \equiv A(3x-1) + B(x+2)$$

let $x=-2$, $\Rightarrow -14 = -7A$

$\therefore A = 2$

let $x = \frac{1}{3}$, $\Rightarrow -\frac{7}{3} = \frac{7}{3}B$

$\therefore B = -1$

With the acknowledgement of Exam Solutions.

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Exam Solutions

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