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Partial Fractions | Past Paper Question | C4 January 2009 Q3(a)

$$f(x) = \frac{27x^2+32x+16}{(3x+2)^2(1-x)} \equiv \frac{A}{3x+2} + \frac{B}{(3x+2)^2} + \frac{C}{1-x}$$

$$\therefore\ 27x^2+32x+16 \equiv A(3x+2)(1-x) + B(1-x) + C(3x+2)^2$$

when $x=1$

$$75 = 25C \Rightarrow C = 3$$

compare coefficients of x^2:

$$27 = -3A + 9(3)$$

$$\therefore\ 0 = -3A$$

$$\therefore\ A = 0$$

when $x=0$

$$16 = B + 12$$

$$\therefore\ B = 4$$

$$\therefore\ A=0,\ B=4,\ C=3$$

With the acknowledgement of Exam Solutions.

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