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Partial Fractions | Past Paper Question | C4 Edexcel June 2009 Q3a

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

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

$$\text{let } x = -1, \quad 6 = B(-1)(2)$$

$$\therefore B = -3$$

$$\text{let } x = -3, \quad 10 = C(-5)(-2)$$

$$\therefore C = 1$$

$$\text{let } x = -\frac{1}{2}, \quad 5 = A\left(\frac{1}{2}\right)\left(\frac{5}{2}\right)$$

$$\therefore 20 = 5A$$

$$\therefore A = 4$$

$$\therefore A = 4, B = -3, C = 1$$



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