Question	Answer	Marks	Guidance
(a)	State or imply the form $\frac{A}{x-2}+\frac{Bx+C}{2x^2+3}$	**B1**	If $1-\frac{A}{x-2}+\frac{Bx+C}{2x^2+3}$ or $\frac{A}{x-2}+\frac{C}{2x^2+3}$ B0 then M1 A1 (for $A = 3$) still possible.
	Use a correct method for finding a constant	**M1**	
	Obtain one of $A = 3$, $B = -1$ and $C = 6$	**A1**	Allow all A marks obtained even if method would give errors if equations solved in a different order.
	Obtain a second value	**A1**	
	Obtain the third value	**A1**	
		5	

Question	Answer	Marks	Guidance
(b)	Use correct method to find the first two terms of the expansion of $(x-2)^{-1}$, $\left(1-\frac{1}{2}x\right)^{-1}$, $(2x^2+3)^{-1}$ or $\left(1+\frac{2}{3}x^2\right)^{-1}$	**M1**	Symbolic binomial coefficients not sufficient for the M1.
	Obtain correct unsimplified expansions, up to the term in x^2, of each partial fraction	**A1 FT** **A1 FT**	The FT is on A, B and C. $-\frac{A}{2}\left[1-\left(-\frac{x}{2}\right)+\frac{(-1)(-2)}{2}\left(-\frac{x}{2}\right)^2+\ldots\right]$ $\frac{Bx+C}{3}\left[1-\frac{2x^2}{3}+\ldots\right]$
	Extract the coefficient 3 correctly from $(2x^2+3)^{-1}$ with expansion to $1\pm\frac{2}{3}x^2$ then multiply by $Bx+C$ up to the terms in x^2, where $BC\neq 0$	**M1**	$\frac{C}{3}+\frac{Bx}{3}\pm\frac{C}{3}\left(\frac{2}{3}\right)x^2$ or $\frac{1}{3}\left(C+Bx\pm C\left(\frac{2}{3}\right)x^2\right)$ Allow a slip in multiplication for M1. Allow miscopies in B and C from **7(a)**.
	Obtain final answer $\frac{1}{2}-\frac{13}{12}x-\frac{41}{24}x^2$	**A1**	Do not ISW.
		5	