Question	Answer	Marks	Guidance
4(a)	$\frac{(2x-1)+4}{(2x-1)^2}=\frac{2x+3}{(2x-1)^2}$	**B1**	
	Alternative method		
	$\frac{(2x-1)^2+4(2x-1)}{(2x-1)^3}=\frac{4x^2+4x-3}{(2x-1)^3}$ $=\frac{(2x-1)(2x+3)}{(2x-1)^3}=\frac{2x+3}{(2x-1)^2}$	**(B1)**	
4(b)	Use of $\int \frac{1}{2x-1}+\frac{4}{(2x-1)^2}\,dx$ to obtain $\frac{1}{2}\ln(2x-1)-\frac{2}{(2x-1)}$	**2**	**B1** for $\frac{1}{2}\ln(2x-1)$ or equivalent **B1** for $-\frac{2}{(2x-1)}$, allow unsimplified
	$\left[\frac{1}{2}\ln(2x-1)-\frac{2}{(2x-1)}\right]_2^5$ $\left(\frac{1}{2}\ln 9-\frac{2}{9}\right)-\left(\frac{1}{2}\ln 3-\frac{2}{3}\right)$	**M1**	For application of limits, must be in the form $a\ln(2x-1)+\frac{b}{(2x-1)}$
	$=\frac{4}{9}+\ln\sqrt{3}$	**2**	**A1** for $\ln\sqrt{3}$ **A1** for $\frac{4}{9}$
5(a)	$\frac{dy}{dx}=\frac{\left(3x\times\frac{4x}{(2x^2-3)}\right)-3\ln(2x^2-3)}{9x^2}$ oe	**3**	**B1** for $\frac{4x}{(2x^2-3)}$ **M1** for attempt to differentiate a quotient or product **A1** for all terms other than $\frac{4x}{(2x^2-3)}$ correct.
5(b)	When $x=2$, $\frac{dy}{dx}=0.133$	**M1**	For substitution of $x=2$ into *their* $\frac{dy}{dx}$ and use of h
	$0.133h$	**A1**	
5(c)	$\frac{dx}{dt}=\frac{4}{0.133}$	**M1**	For $\frac{4}{\text{their value of } \frac{dy}{dx} \text{ from (b)}}$
	30.2	**A1**	