Question	Answer	Marks	Partial Marks
9	$\frac{dy}{dx} = -(3x-1)^{-2} \times 3$	**M2**	**M1** for $\frac{dy}{dx} = -k(3x-1)^{-2}$ where $k > 0$
	[When $x = 1$] $\frac{dy}{dx} = -\frac{3}{4}$ and $y = \frac{9}{2}$	**A1**	**FT** *their* $\frac{dy}{dx}$ providing **M1** has been awarded
	Equation of tangent: $y - \frac{9}{2} = -\frac{3}{4}(x-1)$ oe isw	**M1**	**FT** the value of *their* $\frac{dy}{dx}$ at $x = 1$ and *their y*
	$B(7, 0)$ oe	**A1**	
	Area of triangle: $\frac{1}{2} \times \frac{9}{2} \times \left((their 7) - 1\right)$ or $\frac{27}{2}$ nfww or $-\frac{3}{8}(49) + \frac{21}{4}(7) - \left(-\frac{3}{8} + \frac{21}{4}\right)$	**M1**	**FT** *their* 7 and *their* $-0.75x + 5.25$ of the form $mx + c$ if needed
	[Area under curve = F(x) =] $\left[4x + \frac{1}{3}\ln(3x-1)\right]_1^9$ oe	**B2**	**B1** for $\int \frac{1}{3x-1}\,dx = k\ln(3x-1)$ or $\frac{1}{3}\ln 3x - 1$
	Correct and actioned plan e.g. F(9) – F(1) – *their* $\frac{27}{2}$	**M1**	**dep** on at least previous **B1** and correct plan or correct **FT** area of triangle oe
	$18\frac{1}{2} + \frac{1}{3}\ln 13$ or 19.4 or 19.35[49...]	**A1**	
10	$\overrightarrow{OP} = \lambda(\mathbf{a} + \mathbf{c})$ oe	**B1**	
	$\overrightarrow{OP} = \mathbf{a} + \mu\left(-\mathbf{a} + \frac{2}{5}\mathbf{c}\right)$ oe	**B2**	**B1** for $\overrightarrow{OP} = \mathbf{a} + \mu\left(-\mathbf{a} + \left(their \frac{2}{5}\right)\mathbf{c}\right)$
	Equates components at least once: $\lambda = 1 - \mu$ or $\lambda = \frac{2}{5}\mu$	**M1**	**FT** providing at least **B1** awarded
	Equates components: $\lambda = 1 - \mu$ and $\lambda = \frac{2}{5}\mu$	**A1**	
	$\mu = \frac{5}{7}$ $\lambda = \frac{2}{7}$ and $DP : PA = 2 : 5 = OP : PB$ oe	**A2**	**A1** for $\mu = \frac{5}{7}$ or $\lambda = \frac{2}{7}$

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