Question	Answer	Marks	Guidance
(a)	$(3x-2)^{\frac{1}{2}} = \frac{1}{2}x+1 \Rightarrow 3x-2 = \left(\frac{1}{2}x+1\right)^2 = \frac{1}{4}x^2+x+1$	**M1**	Equating curve and line, attempt to square; $\frac{1}{4}x^2+1$ M0
	$\Rightarrow \frac{1}{4}x^2-2x+3[=0]\left[\Rightarrow x^2-8x+12=0\right] \Rightarrow (x-6)(x-2)[=0]$	**M1**	Forming and solving a 3TQ by factorisation, formula or completing the square – see guidance.
	(2, 2) and (6, 4)	**A1 A1**	A1 for each point, or A1 A0 for two correct x-values. If M0 for solving, **SC B2** possible: B1 for each point or B1 B0 for two correct x-values.
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Question	Answer	Marks	Guidance
(b)	Area $= \pm\int_{[2]}^{[6]}\left(\left(3x-2\right)^{\frac{1}{2}}-\left(\frac{1}{2}x+1\right)\right)[\mathrm{d}x]$	***M1**	For intention to integrate and subtract (M0 if squared).
	$\pm\left[\frac{2}{9}\left(3x-2\right)^{\frac{3}{2}}-\left(\frac{1}{4}x^2+x\right)\right]_2^6$	**B1 B1**	B1 for each bracket integrated correctly (in any form).
	$\pm\left(\left[\frac{2}{9}\left(16\right)^{\frac{3}{2}}-\left(\frac{1}{4}\times 36+6\right)\right]-\left[\frac{2}{9}\left(4\right)^{\frac{3}{2}}-\left(\frac{1}{4}\times 4+2\right)\right]\right)$	**DM1**	$\pm$(F(*their* 6) – F(*their* 2)) with *their* integral. Allow 1 sign error.
	$\frac{4}{9}$	**A1**	AWRT 0.444. **SC1 B1** for $\frac{4}{9}$ if *M1 B1 B1 DM0. **SC2 B1** for $\frac{4}{9}$ if *M1 B0 B0 DM0, provided limits stated.
	Alternative method for question 7(b)		
	Area $= \pm\int_{[2]}^{[6]}\left(3x-2\right)^{\frac{1}{2}}\ [\mathrm{d}x]$ – area of trapezium (or triangle + rectangle)	***M1**	For intention to integrate and subtract (M0 if squared).
	$\pm\left[\frac{2}{9}\left(3x-2\right)^{\frac{3}{2}}\right]_2^6-4\left(\frac{2+4}{2}\right)$ **or** $\pm\left[\frac{2}{9}\left(3x-2\right)^{\frac{3}{2}}\right]_2^6-\left(\frac{2+4}{2}+\left(2\times 4\right)\right)$	**B1** **B1 FT**	B1 for bracket integrated correctly (in any form). B1 FT for using correct formula with *their* values.
	$\pm\left(\left(\frac{2}{9}\left(16\right)^{\frac{3}{2}}-\frac{2}{9}\left(4\right)^{\frac{3}{2}}\right)-12\right)$	**DM1**	$\pm$(F(*their* 6) – F(*their* 2)) using *their* integral. Allow 1 sign error.

Question	Answer	Marks	Guidance
(b)	$\frac{4}{9}$	**A1**	AWRT 0.444. **SC1 B1** for $\frac{4}{9}$ if *M1 B1 B1 DM0. **SC2 B1** for $\frac{4}{9}$ if *M1 B0 B0 DM0, provided limits stated.
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