Question			Answer	Marks	AO	Guidance	
6	(a)		$x = 1$	B1 [1]	1.1	cao or $(1, 0)$	Need not see $x =$
6	(b)		$\log_2\left(x-\frac{3}{2}\right)=-3$	M1	1.1	Setting $\log_2\left(x-\frac{3}{2}\right)+3$ equal to zero and isolating $\log_2\left(x-\frac{3}{2}\right)$ term	
			$x-\frac{3}{2}=2^{-3}$	M1	1.1	Correctly removing logs	After sensible work
			$x=2^{-3}+\frac{3}{2}\Rightarrow x=1.625$	A1 [3]	1.1	cao (o.e. exact answer e.g., $\frac{13}{8}$)	Need not see $x =$ Condone 1.63
6	(c)		$2\log_2 x=\log_2\left(x^2\right)$ seen	B1	1.1	Using the power law for logarithms	
			$\log_2\left(\frac{x^2}{x-\frac{3}{2}}\right)=3$	M1	1.1	Using subtraction or addition law for logarithms	oe, e.g. using $3 = \log_2 8$ etc
			$x^2=8\left(x-\frac{3}{2}\right)\Rightarrow x^2-8x+12(=0)$	M1	1.1	Removing logs correctly and re-arranging to a three-term quadratic in x	After sensible work
			$(x-2)(x-6)=0$ Therefore, the x coordinate of C is 2	A1 [4]	2.2a	**AG** so sufficient working must be shown	If solving **BC** then need to see $x = 2$ and $x = 6$ with $x = 2$ chosen as x coordinate

Question			Answer	Marks	AO	Guidance	
6	(d)		y-coordinate of C is 2	**B1**	**1.1**	soi	**NB** x-coordinate of C is 2
			Area $= \frac{1}{2}(1.625-1)(2)$	**M1***	**3.1a**	Correct expression for the area of triangle ABC with their x-coordinate of B from **(b)** and their y-coordinate	0.625 Need $x = 1$
			$0.656 - 0.625$	**M1dep***	**1.1**	Difference between their value and 0.656 is calculated	
			Under-estimate by 0.031 (units^2)	**A1**	**3.2b**	cao (both numerical value and 'under-estimate' required)	Allow 0.026 (comes from $x = 1.63$ in (b)) Allow 4.73% or 3.96%
				[4]			