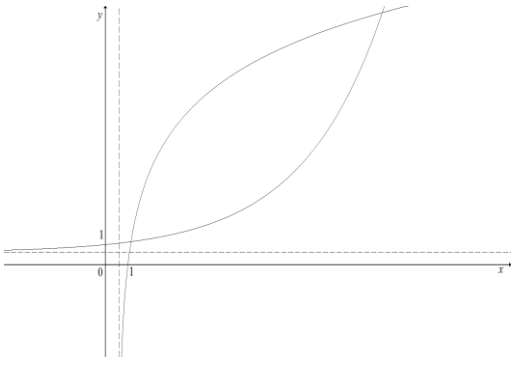
Question	Answer	Marks	Guidance
3(a)	$ACB = 2\tan^{-1}\left(\frac{12}{5}\right)$ oe	**M1**	
	$ACB = (2\times 1.176\ldots)$ = 2.35 to 2 dp	**A1**	Must see justification to 2 dp
3(b)	Arc length = $5\times ACB$	**B1**	
	Perimeter = 35.8	**B1**	Allow awrt 35.8
3(c)	Area = $(12\times 5)-\left(\frac{1}{2}\times 5^2\times 2.35\right)$	**M2**	**M1** for area of kite or area of sector **M1 dep** for kite area – sector area
	30.6	**A1**	Allow greater accuracy Any use of fractions gets **A0**
4(a)(i)	$\frac{2}{3}$	**B1**	Allow $x>\frac{2}{3}$, $a=\frac{2}{3}$, but not $x=\frac{2}{3}$ unless it is replaced with a correct answer
4(a)(ii)	$\mathbb{R}$ oe	**B1**	Must be using correct notation
4(a)(iii)	$3y-2=e^{\frac{x}{4}}$ or $3x-2=e^{\frac{y}{4}}$	**M1**	For valid attempt to reach this stage
	$f^{-1}(x)=\frac{1}{3}\left(e^{\frac{x}{4}}+2\right)$	**A1**	Must be using correct notation
	Domain $x\in\mathbb{R}$ Range $f^{-1}>\frac{2}{3}$	**B2**	**B1** for each, must be using the correct notation.
4(a)(iv)		**4**	**B1** for the shape of $y = f(x)$ in the first and fourth quadrants only **B1 dep** on previous **B1** for (1, 0) **B1** for a correct shape for $f^{-1}(x)$, or **FT** on *their* $y = f(x)$ with correct shape in first quadrant for symmetry about $y = x$ soi **B1 dep** on previous **B1**, for (0, 1) and at least one point of intersection with $y = f(x)$ correct in the first quadrant