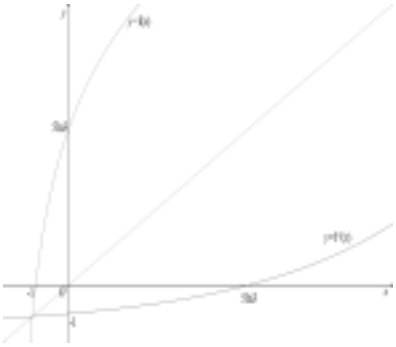
Question	Answer	Marks	Guidance
6(c)	$P:\begin{pmatrix}-50\\70\end{pmatrix}$ $Q:\begin{pmatrix}-30\\210\end{pmatrix}$	**M1**	Using $t=10$ to find position vector of each particle
	$\sqrt{20^2+140^2}$	**M1**	**Dep** on previous M mark, for use of Pythagoras on difference of the 2 position vectors
	$100\sqrt{2}$	**A1**	
7(a)	$\mathrm{f}\in\mathbb{R}$	**B1**	Allow *y* but not *x*
7(b)	$x=5\ln(2y+3)$ $\mathrm{e}^{\frac{x}{5}}=2y+3$	**M1**	For a complete attempt to obtain inverse
	$\mathrm{f}^{-1}(x)=\dfrac{\mathrm{e}^{\frac{x}{5}}-3}{2}$	**A1**	Must be using correct notation
	Domain $x\in\mathbb{R}$	**B1**	**FT** on *their* **(a)**. Must be using correct notation
7(c)		**5**	**B1** for shape of $y=\mathrm{f}(x)$ **B1** for shape of $y=\mathrm{f}^{-1}(x)$ **B1** for $5\ln 3$ or 5.5 and -1 on both axes for $y=\mathrm{f}(x)$ **B1** for $5\ln 3$ or 5.5 and -1 on both axes for $y=\mathrm{f}^{-1}(x)$ **B1** All correct, with apparent symmetry which may be implied be previous 2 B marks or by inclusion of $y=x$, and implied asymptotes, may have one or two points of intersection
8(a)(i)	$\dfrac{1}{\left(1+\dfrac{1}{\sin\theta}\right)\left(\sin\theta-\sin^2\theta\right)}$	**B1**	For use of $\mathrm{cosec}\,\theta=\dfrac{1}{\sin\theta}$, may be implied
	$\dfrac{1}{\sin\theta+1-\sin\theta-\sin^2\theta}$	**M1**	For expansion of brackets
	$\dfrac{1}{\cos^2\theta}$	**M1**	For simplification and use of identity
	$\sec^2\theta$	**A1**	For final result, must see $\dfrac{1}{\cos^2\theta}$