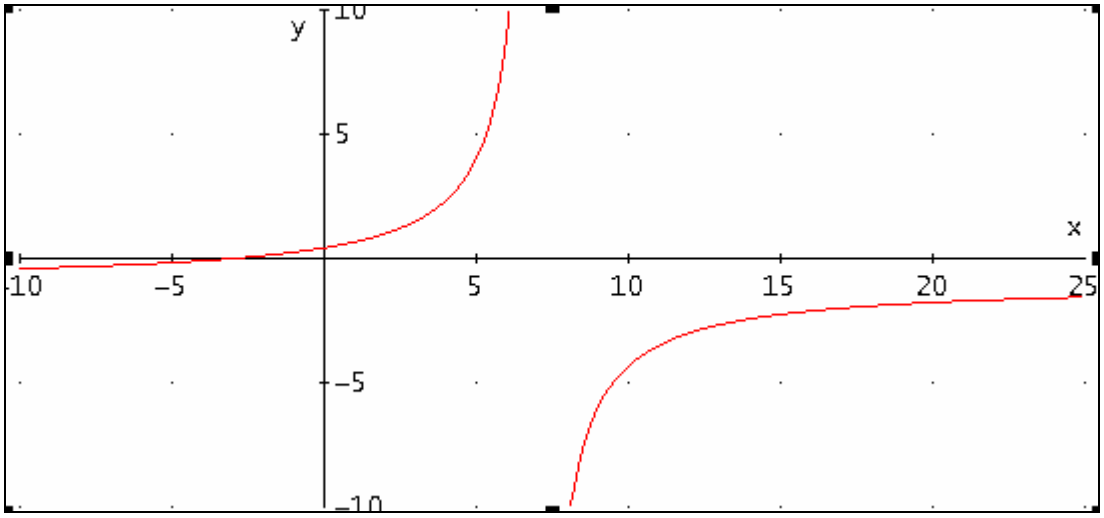
ANSWERS TO SEMESTER ONE EXAMINATION JUNE 2005 (JANUARY 2005 INTAKE)

1	PROVE
2	$-n^2(4n+3)$; $4n^3+9n^2+6n+1$; 8
3	-24 ; $\frac{97}{4}$
4	i) Asymptotes : $y=x+9$ and $x=7$. ii) Asymptotes : $y=\frac{1}{\lambda}$, $x=\frac{-1}{\lambda}$ and $x=7$. iii) Asymptotes : $y=-1$ and $x=7$. No stationary points. The curve crosses the axes at points : $\left(0,\frac{3}{7}\right)$ and $(-3,0)$. 
5	i) $\left\|\frac{144-15\sin t-20\cos t}{13}\right\|$; (ii) SHOW ; (iii) $29.4°$ OR $150.6°$
6	i) 3 ; (ii) $\begin{pmatrix}-8\\-1\\14\end{pmatrix}$; (iii) $\frac{42\sqrt{29}}{29}$; (iv) $\frac{-3\sqrt{58}}{58}$