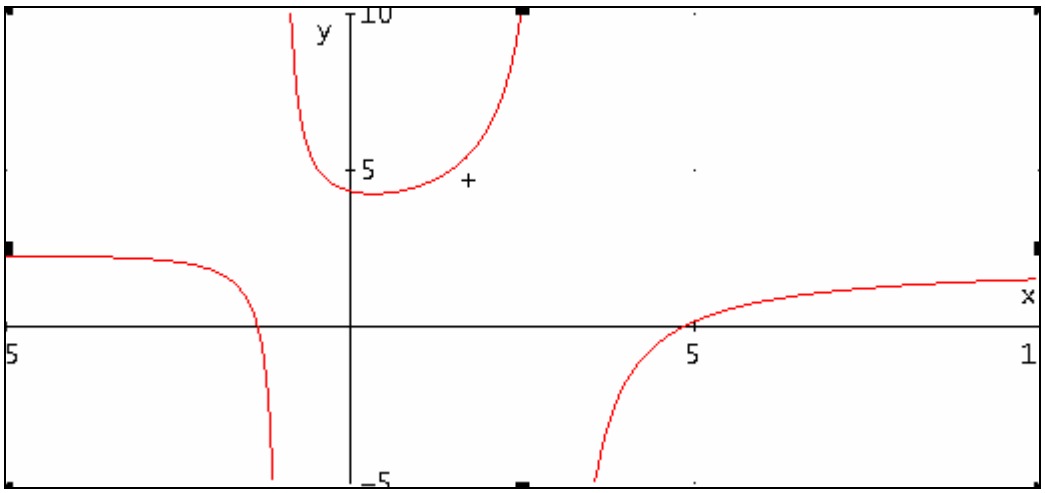
ANSWERS TO SEMESTER ONE EXAMINATION DECEMBER 2007 (JULY 2007 INTAKE)

1	$\dfrac{2}{(n+1)(n+2)(n+3)}$; $\dfrac{1}{3}-\dfrac{2}{(n+2)(n+3)}$; $\dfrac{1}{3}$
2	PROVE
3	$5u^4+20u^3+42u^2+36u-7=0$; $\dfrac{-492}{25}$
4	Asymptotes : $y=2$, $x=-1$ and $x=3$ Minimum Point $\left(-5,\dfrac{9}{4}\right)$; Maximum Point $\left(\dfrac{1}{3},\dfrac{17}{4}\right)$; The curve crosses the axes at points : $\left(0,\dfrac{13}{3}\right)$, $\left(\dfrac{7+\sqrt{153}}{4},0\right)$, $\left(\dfrac{7-\sqrt{153}}{4},0\right)$ 
5	a) $\begin{pmatrix}1\\2\\0\end{pmatrix}+\lambda\begin{pmatrix}13\\-7\\5\end{pmatrix}$ OR $\begin{pmatrix}\frac{33}{7}\\0\\\frac{10}{7}\end{pmatrix}+\lambda\begin{pmatrix}13\\-7\\5\end{pmatrix}$ OR $\begin{pmatrix}0\\\frac{33}{13}\\\frac{-5}{13}\end{pmatrix}+\lambda\begin{pmatrix}13\\-7\\5\end{pmatrix}$; b) $\sqrt{\dfrac{93}{29}}$