Question			Answer	Marks	AO	Guidance	
4			**AG** $\frac{1}{(2+x)^2} = \frac{1}{4\left(1+\frac{x}{2}\right)^2} = \left[\frac{1}{4}\left(1+\frac{x}{2}\right)^{-2}\right]$	**B1**	**2.1**	Dealing correctly with the 2. Need not use negative powers for this mark	Note there is mathematically nothing wrong with the direct expansion $(2+x)^{-2} = 2^{-2} - 2\times 2^{-3}x + 3\times 2^{-4}x^2$ Award B1M1 if seen
			$= \frac{1}{4}\left(1+(-2)\left(\frac{x}{2}\right)+\frac{(-2)(-3)}{2!}\left(\frac{x}{2}\right)^2+\ldots\right)$	**M1**	**2.1**	Allow for expanding $(1+kx)^{-2}$ even where the B mark is not awarded	
			$\frac{1-x}{(2+x)^2} \approx \frac{(1-x)}{4}\left(1-x+\frac{3}{4}x^2\right)$	**M1**	**2.1**	Attempt to multiply their expansion by the numerator	
			$\approx \frac{1}{4} - \frac{1}{2}x + \frac{7}{16}x^2$	**A1**	**2.1**	Convincing argument	
			Alternative method $\frac{1}{(2+x)^2} = \frac{3}{(2+x)^2} - \frac{1}{2+x}$	**M1**		Using partial fractions – allow an arithmetic slip	
			$\frac{3}{(2+x)^2} = \frac{3}{4}\left(1+(-2)\left(\frac{x}{2}\right)+\frac{(-2)(-3)}{2!}\left(\frac{x}{2}\right)^2+\ldots\right)$	**B1**		Dealing correctly with the 2. Need not use negative powers for this mark	
			$-\frac{1}{2+x} = -\frac{1}{2}\left(1-\frac{x}{2}+\frac{x^2}{4}\ldots\right)$	**M1**		Allow for expanding both $(1+kx)^{-2}$ and $(1+kx)^{-1}$ even where the B mark is not awarded	
			$\approx \frac{1}{4} - \frac{1}{2}x + \frac{7}{16}x^2$	**A1**		Adding terms to complete a convincing argument	
				[4]			