Question			Answer	Marks	AO	Guidance	
8	(a)		$\left(1+\frac{3}{4}x\right)^{\frac{3}{2}}=1+\left(\frac{3}{2}\right)\left(\frac{3}{4}x\right)$	B1	1.1	Correct first two terms	Allow unsimplified Expect $1+\frac{9}{8}x$

Question			Answer	Marks	AO	Guidance	
			$+\frac{\left(\frac{3}{2}\right)\left(\frac{1}{2}\right)}{2}\left(\frac{3}{4}x\right)^2$	**M1**	**1.1**	Attempt third term	Condone lack of brackets when attempting to square ie $\frac{3}{4}x^2$ Coefficient must be $\frac{\left(\frac{3}{2}\right)\left(\frac{1}{2}\right)}{2}$ or equiv
				A1	**1.1**	Obtain correct third term	Allow unsimplified $\frac{3}{4}x^2$ is **A0** unless recovered by later work Expect $\frac{27}{128}x^2$
			$(4+3x)^{\frac{3}{2}} = 8\left(1+\frac{3}{4}x\right)^{\frac{3}{2}} = 8+9x+\frac{27}{16}x^2$	**B1FT**	**1.1a**	Multiply their 3 term expansion by 8	Bracket expanded and coefficients simplified If **B1M1A1** awarded, but attempt to simplify then goes wrong, **B1FT** is **not** also awarded ISW once correct expansion seen
				[4]			
8	**(b)**		$\lvert x\rvert < \frac{4}{3}$ or $-\frac{4}{3} < x < \frac{4}{3}$	**B1**	**1.1**	Could also be $\lvert x\rvert \leq \frac{4}{3}$ or $-\frac{4}{3} \leq x \leq \frac{4}{3}$, as $n > 0$	Must be condition for x, not kx
				[1]			

8	**(c)**		$\left(8+9x+\frac{27}{16}x^2\right)\left(1+2ax+a^2x^2\right)$ coeff of x^2 is $8a^2 + 18a + \frac{27}{16}$	**M1**	**3.1a**	Expand $(1 + ax)^2$ and attempt at least one coeff of x^2	Allow ax as middle term, and/or ax^2 as third term Attempt at x^2 term could be part of a fuller expansion

Question			Answer	Marks	AO	Guidance	
				M1	**1.1**	Attempt all three coeff of x^2, and no others	If part of fuller expansion then **M1** awarded when only three relevant terms used
			$8a^2 + 18a + \frac{27}{16} = \frac{107}{16}$ $8a^2 + 18a - 5 = 0$	**A1**	**3.1a**	Equate to $\frac{107}{16}$ to obtain correct quadratic	aef, including unsimplified **A0** if a mix of terms and coefficients, but can be recovered
			$(2a+5)(4a-1) = 0$ $a = -\frac{5}{2}$ and $a = \frac{1}{4}$	**A1**	**1.1**	Solve quadratic, possibly **BC**, to obtain $a = -\frac{5}{2}$ and $a = \frac{1}{4}$	
				[4]			