

6	(a)		$(1 - \frac{3}{8}x)^{\frac{1}{3}} = 1 + (\frac{1}{3})(-\frac{3}{8}x) + \frac{(\frac{1}{3})(-\frac{2}{3})(-\frac{3}{8}x)^2}{2!}$ $= 1 - \frac{1}{8}x - \frac{1}{64}x^2$ $(8 - 3x)^{\frac{1}{3}} = 8^{\frac{1}{3}}(1 - \frac{3}{8}x)^{\frac{1}{3}} = 2(1 - \frac{3}{8}x)^{\frac{1}{3}}$ $(8 - 3x)^{\frac{1}{3}} = 2 - \frac{1}{4}x - \frac{1}{32}x^2$	B1	1.1	Obtain correct first two terms	Allow unsimplified second term, including product of two fractions
				M1	1.1	Attempt third term in expansion of $(1 - \frac{3}{8}x)^{\frac{1}{3}}$	Allow BOD if no brackets, even if never recovered
				A1	1.1	Correct third term	Allow BOD if no negative sign Allow unsimplified fraction as coefficient, but must be single term
				B1FT	1.1	Correct expansion of $(8 - 3x)^{\frac{1}{3}}$	FT as 2 x their expansion (at least two terms) Bracket expanded and fractions simplified
			[4]				
	(b)		$ x < \frac{8}{3}$	B1	1.2	Allow any equivalent eg $-\frac{8}{3} < x < \frac{8}{3}$	Must be strict inequality
				[1]			Must be condition for x, so B0 for $ 3x < 8$
	(c)		$(1 + 2x)^{-2} = 1 + (-2)(2x) + \frac{(-2)(-3)}{2!}(2x)^2$ $= 1 - 4x + 12x^2$ $(2 \times 12) + (-\frac{1}{4} \times -4) + (-\frac{1}{32} \times 1)$	M1	3.1a	Attempt first three terms of expansion	Must be expanding $(1 + 2x)^{-2}$ Allow BOD if no brackets on 2x, even if never recovered
				A1	1.1	Obtain correct first three terms	Allow unsimplified fraction for coeff of third term
				M1	1.1	Attempt all 3 relevant products	Finding 3 appropriate terms from the product of two 3-term quadratics If part of full expansion then M1 when reqd 3 products and no others are combined

Question			Answer	Marks	AO	Guidance	
			$\frac{799}{32}$ or $24\frac{31}{32}$	A1 [4]	1.1	Any exact equivalent, including 24.96875	Condone x^2 still present