(3)

7	(a) Expand $\left(1 + \frac{x}{3}\right)^{\frac{1}{4}}$ in ascending powers of x up to and including the term in $x^3$ , giving	<u> </u>	
	each coefficient as an exact fraction.	(3)	

- (b) Expand  $\left(1 \frac{x}{3}\right)^{-\frac{1}{4}}$  in ascending powers of x up to and including the term in  $x^3$ , giving each coefficient as an exact fraction.
- (c) Write down the range of values of x for which both of your expansions are valid. (1)
- (d) Expand  $\left(\frac{3+x}{3-x}\right)^{\frac{1}{4}}$  in ascending powers of x up to and including the term in  $x^2$ , giving each coefficient as an exact fraction.

(e) Hence obtain an estimate, to 3 significant figures, of $\int_0^{0.6} \left( \frac{3+x}{3-x} \right)^{\frac{1}{4}} dx$	(4
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Question 7 continued				



Question 7 continued				

Question 7 continued				
	(Total for Question 7 is 14 marks)			

