3	(a) Expand $(1 + 3x^2)^{-\frac{1}{4}}$ in ascending powers of $x$ up to and including the term in $x^6$ , giving each coefficient as a fraction in its lowest terms.	
	(b) Find the range of values of x for which your expansion is valid.	(3)
	$f(x) = \frac{3 + kx^2}{(1 + 3x^2)^{\frac{1}{4}}} \qquad k \in \mathbb{R}^+$	
	(c) Obtain a series expansion for $f(x)$ in ascending powers of $x$ up to and including the term in $x^6$ .	(2)
		(3)
	Given that the coefficient of $x^4$ in the series expansion of $f(x)$ is zero	
	(d) find the exact value of $k$ .	(2)

Question 3 continued				



Question 3 continued			
	(Total for Question 3 is 9 marks)		