

Q	Marking instructions	AO	Marks	Typical solution
9(a)	Selects an appropriate method to determine A and B eg forms $x + 3 = A(1 - x) + B(1 - 3x)$ and substitutes a value for x or compares coefficients. Or Uses cover-up method/inspection PI by correct A or B	3.1a	M1	$x + 3 = A(1 - x) + B(1 - 3x)$ $x = 1 \Rightarrow 4 = -2B$ $B = -2$ $A = 5$
	Obtains correct $A=5$ and $B=-2$	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
9(b)(i)	Obtains 2 correct terms ACF	1.1a	M1	$(1 - x)^{-1} \approx$ $1 + (-1)(-x) + \frac{(-1)(-2)(-x)^2}{2}$ $= 1 + x + x^2$
	Obtains $1 + x + x^2$	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
9(b)(ii)	Obtains $1 + 3x + 9x^2$	2.2a	R1	$1 + 3x + 9x^2$
	Subtotal		1	

Q	Marking instructions	AO	Marks	Typical solution
9(c)(i)	Forms their $A(1 + 3x + 9x^2) + B(1 + x + x^2)$ Or Expands their $(x + 3)(1 + x + x^2)(1 + 3x + 9x^2)$ with two brackets correctly expanded up to terms in x^2	3.1a	M1	$5(1 + 3x + 9x^2) - 2(1 + x + x^2)$ $= 3 + 13x + 43x^2$
	Obtains $3 + 13x + 43x^2$	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
9(c)(ii)	Deduces range of values for x $ x < \frac{1}{3}$ OE	2.2a	R1	$-\frac{1}{3} < x < \frac{1}{3}$
	Subtotal		1	

	Question 9 Total		8	
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