

Q	Marking instructions	AO	Marks	Typical solution
7(a)	Expands $(x + h)^4$, with correct powers of x and h .	1.1a	M1	$(x + h)^4$
	Obtains fully correct expansion.	1.1b	A1	$= x^4 + 4x^3h + 6x^2h^2 + 4xh^3 + h^4$
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
7(b)	Forms an expression for $\frac{\text{difference in } y}{\text{difference in } x}$ in terms of x and h ACF FT their expression from part (a)	1.1b	B1F	$\frac{x^4 + 4x^3h + 6x^2h^2 + 4xh^3 + h^4 - x^4}{h}$
	Subtotal		1	

Q	Marking instructions	AO	Marks	Typical solution
7(c)	Explains or shows that the answer to part (b) can be (expanded and) simplified. FT their parts (a) and (b) where working is shown.	1.1b	E1F	The expression from part (b) can be simplified by cancelling h
	Explains that the gradient is found by letting h tend to 0 or Uses the limit as $h \rightarrow 0$	1.1b	E1	We then apply the limit as h tends to 0 to obtain the gradient.
	Subtotal		2	

	Question 7 Total		5	
--	-------------------------	--	----------	--