

Q	Marking instructions	AO	Marks	Typical solution
8	Substitutes $(x+h)$ into $f(x+h) - f(x)$ Condone one slip	1.1a	M1	$\lim_{h \rightarrow 0} \left[\frac{3(x+h) - 5(x+h)^2 - (3x - 5x^2)}{h} \right]$ $\lim_{h \rightarrow 0} \left[\frac{3x + 3h - 5x^2 - 10xh - 5h^2 - 3x + 5x^2}{h} \right]$ $\lim_{h \rightarrow 0} \left[\frac{3h - 10xh - 5h^2}{h} \right]$ $\lim_{h \rightarrow 0} [3 - 10x - 5h]$ $\frac{dy}{dx} = 3 - 10x$
	Obtains correct expanded expression for $f(x+h) - f(x)$	1.1b	A1	
	Divides each term in their numerator by h	1.1a	M1	
	Completes rigorous mathematical argument to show the required result. Must see $\lim_{h \rightarrow 0}$	2.1	R1	
	Total		4	