Q	Marking instructions	AO	Marks	Typical solution
10	Differentiates to obtain $2x \pm 2\sin x$	1.1a	M1	$f'(x) = 2x - 2\sin x$ $f''(x) = 2 - 2\cos x$ $f''(0) = 2 - 2\cos(0) = 0$ $f''(-0.1) = 9.99 \times 10^{-3}$ $f''(0.1) = 9.99 \times 10^{-3}$ $f''(x)$ does not change sign either side of $x = 0$ Therefore, the curve does not have a point of inflection at $x = 0$
	Differentiates again to obtain $2 - 2\cos x$	1.1b	A1	
	Concludes $f''(0) = 0$ and tests the sign of their $f'(x)$ or $f''(x)$ either side of $x = 0$ Or Deduces that $f''(x) \geq 0$	2.1	M1	
	Completes a reasoned argument to conclude that $y = f(x)$ does not have a point of inflection at $x = 0$ Or Completes a reasoned argument to conclude that $y = f(x)$ does not have a point of inflection by consideration of the function	2.4	R1	
	Question 10 Total		**4**	