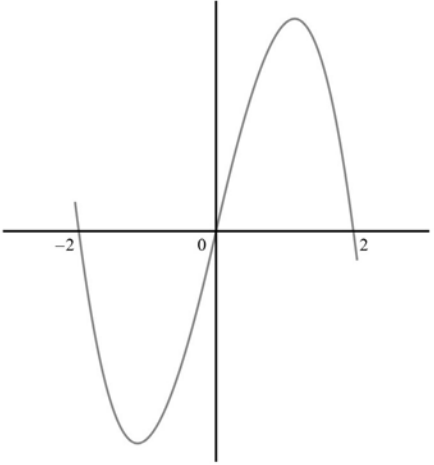


Q	Marking Instructions	AO	Marks	Typical Solution
9(a)(i)	Integrates to obtain terms in x^2 and x^4	1.1a	M1	$2x^2 - \frac{x^4}{4} + c$
	Obtains fully correct integral (ISW) Condone omission of $+c$	1.1b	A1	
Subtotal			2	
9(a)(ii)	Obtains answer of 0 <i>nb</i> correct answer can be obtained directly from calculator, if working shown then CSO	1.1b	B1	0
Subtotal			1	
9(b)	Shows curve with three zeros with correct orientation	1.1b	B1	 <p>The area between -2 and 0 lies below the axis so its integral has a negative value</p>
	Explains that the integral for the area below the axis has a negative value (PI) (Allow even if the graph is incorrectly drawn or omitted)	2.4	E1	
Subtotal			2	
9(c)	Uses $2 \times \int_0^2 4x - x^3 dx$ (OE) Or Obtains values of 4, and -4 or 4 from two separate integrals	1.1a	M1	$2 \times \int_0^2 4x - x^3 dx$ $2 \left[2x^2 - \frac{x^4}{4} \right]_0^2$ $= 8$
	Obtains correct area	1.1b	A1	
Subtotal			2	
Question Total			7	