Question number	Scheme	Marks
2(a)	$(a =)2t - 3$	M1 A1 [2]
(b)	$(s = \int(t^2 - 3t + 4)\mathrm{d}t)$	
	$(s =)\frac{t^3}{3} - \frac{3}{2}t^2 + 4t(+C)$ oe	M1 A1
	$(t = 2, s = 7)$	
	$\frac{2^3}{3} - \frac{3}{2} \times 2^2 + 4 \times 2 + C = 7 \Rightarrow C = \frac{7}{3}$	dM1
	$\frac{4^3}{3} - \frac{3}{2} \times 4^2 + 4 \times 4 + '\frac{7}{3}' = \frac{47}{3}$ oe	M1A1
		[5]
	ALT	
	Displacement $-7 = \int_2^4 \left(x^2 - 3x + 4\right) \mathrm{d}x$	
	$= \left[\frac{x^3}{3} - \frac{3x^2}{2} + 4t\right]_2^4$	[M1A1
	$= \left[\frac{4^3}{3} - \frac{3 \times 4^2}{2} + 4 \times 4\right] - \left[\frac{2^3}{3} - \frac{3 \times 2^2}{2} + 4 \times 2\right]$	dM1M1
	$= \frac{47}{3}$	A1]
		Total 7 marks

Part	Mark	Additional Guidance
2(a)	M1	For a minimally acceptable attempt at differentiation (see general guidance), no power of t must increase.
	A1	Correct expression with or without $a = \ldots$
(b)	M1	For a minimally acceptable attempt at integration (see general guidance), no power of t must decrease. + C is not necessary for this mark.
	A1	Fully correct integration. C is not necessary for this mark.
	dM1	Correct substitution of $t = 2$ into **their** integrated expression, correctly equated to 7 and an attempt to rearrange to find C. **Note: This mark is dependent on the first M mark in (b)**
	M1	Substitution of $t = 4$ correctly into their expression for s, provided it is a changed expression from v
	A1	Correct value oe must be an exact value.
	ALT	
	M1	For a minimally acceptable attempt at integration (see general guidance), no power of t must decrease.
	A1	Fully correct integration
	dM1	For the correct limits between $t = 4$ and $t = 2$ **and** equates to $d - 7$ or equivalent
	M1	Substitutes the limits to evaluate the integral
	A1	Correct value oe must be an exact value.