Question Number	Scheme	Marks
6(a)	Integrate *a* w.r.t. *t*	M1
	$(v=)\ t^2-3t\ \ (+c)$	A1
	Substitute to evaluate c: $t=3,\ v=2\ \Rightarrow c=2$	M1
	$v=t^2-3t+2$	A1
		(4)
6(b)	$v = 0 = t^2 - 3t + 2$ $(= (t-1)(t-2))$ $\Rightarrow t = \ldots$	M1
	$t = 1, 2$	A1
	$s=\int_1^2\left(t^2-3t+2\right)\mathrm{d}t$	M1
	$=\left[\frac{1}{3}t^3-\frac{3}{2}t^2+2t\right]_1^2$	A1ft
	$=\left[\frac{1}{3}(2)^3-\frac{3}{2}(2)^2+2(2)\right]-\left[\frac{1}{3}-\frac{3}{2}+2\right]$	dM1
	$\text{Distance}\ =\frac{1}{6}\ \text{(m)}$	A1
		(6)
		(10 marks)

Notes	
(a) M1	Integrate the given expression for *a*. Must see both powers increase by 1.
A1	Correct expression. Condone missing +c.
M1	Use of given values to find c (or definite integral with values substituted)
A1	Cao including "*v* ="
(b) M1	Set their *v* = 0 and solve for *t* to get two values.
A1	Cao
M1	Integrate their *v* (must have at least two terms). At least two powers increasing by 1.
A1ft	Condone without limits. Ft their *v* (at least two terms).
dM1	A correct method for the required distance, E.g. use of their values of *t* as limits. Dependent on previous M. Must see evidence of substitution: E.g. at least $\frac{2}{3}-\frac{5}{6}$ M0 for incorrect sums, E.g. $\int_0^1 \mathrm{d}t+\int_1^2 \mathrm{d}t$
A1	0.17 or better (do not accept e.g. 0.166). Must be positive.