Question	Scheme	Marks	AOs
2(a)	Integrate **a** wrt t	M1	3.1a
	$\left(t-\frac{3}{2}t^2\right)\mathbf{i}+\left(\frac{2}{3}t^3-t^2\right)\mathbf{j}\ (+\mathbf{C})$	A1	1.1b
	$\left(t-\frac{3}{2}t^2+3\right)\mathbf{i}+\left(\frac{2}{3}t^3-t^2-2\right)\mathbf{j}\quad\left(\text{m s}^{-1}\right)$	A1	1.1b
		(3)	
2(b)	$1-3t=2t^2-2t$ oe	M1	2.1
	$t=\frac{1}{2}$	A1	1.1b
	Integrate their **v** wrt t	M1	3.4
	$\left(\frac{1}{2}t^2-\frac{1}{2}t^3+3t\right)\mathbf{i}+\left(\frac{1}{6}t^4-\frac{1}{3}t^3-2t\right)\mathbf{j}\ (+\mathbf{D})$	A1	1.1b
	Substitute their t value into their position vector	M1	3.1a
	$\left(\frac{41}{16}\mathbf{i}-\frac{1}{32}\mathbf{j}\right)$ (m) oe	A1	1.1b
		(6)	
			(9 marks)

Notes: Accept column vectors throughout

2a	M1	At least two powers increasing by 1.
	A1	Correct vector expression, with or without a constant.
	A1	cao
2b	M1	Complete method (M0 if two separate equations seen without elimination).
	A1	Correct t value.
	M1	At least two powers increasing by 1.
	A1	Correct vector expression, with or without a constant.
	M1	Using their t value correctly, including initial position.
	A1	cao