Question	Scheme	Marks	AO
1(a)	Differentiate **v**	M1	1.1a
	$(\mathbf{a} =)6\mathbf{i} - \dfrac{15}{2}t^{\frac{1}{2}}\mathbf{j}$	A1	1.1b
	$= 6\mathbf{i} - 15\mathbf{j}$ (m s^{-2})	A1	1.1b
		(3)	
1(b)	Integrate **v**	M1	1.1a
	$(\mathbf{r} =)(\mathbf{r}_0) + 3t^2\mathbf{i} - 2t^{\frac{5}{2}}\mathbf{j}$	A1	1.1b
	$= (-20\mathbf{i} + 20\mathbf{j}) + (48\mathbf{i} - 64\mathbf{j}) = 28\mathbf{i} - 44\mathbf{j}$ (m)	A1	2.2a
		(3)	
		(6)	

Marks		Notes
		N.B. Accept column vectors throughout and condone missing brackets in working but they must be there in final answers
1a	M1	Use of $\mathbf{a} = \dfrac{d\mathbf{v}}{dt}$ with attempt to differentiate (both powers decreasing by 1) M0 if **i**'s and **j**'s omitted and they don't recover
	A1	Correct differentiation in any form
	A1	Correct and simplified. Ignore subsequent working (ISW) if they go on and find the magnitude.
1b	M1	Use of $\mathbf{r} = \int \mathbf{v}\,dt$ with attempt to integrate (both powers increasing by 1) M0 if **i**'s and **j**'s omitted and they don't recover
	A1	Correct integration in any form. Condone $\mathbf{r}_0$ not present
	A1	Correct and simplified.