Question	Answer	Marks	Guidance
(a)	For an attempt at integration	***M1**	Power of at least one term increased by 1 and the coefficient changed.
	$v = 4t^{\frac{1}{2}} - \frac{2}{5}t^{\frac{3}{2}}[+C]$	**A1**	Correct v
	$4t^{\frac{1}{2}} - \frac{2}{5}t^{\frac{3}{2}} = 0$	**DM1**	Equating *their* 2-term v to zero and attempt to solve for t or k.
	$k = 10$	**A1**	Final answer $t = 10$ is A0
		4	
(b)	Max speed when $2t^{-\frac{1}{2}} - \frac{3}{5}t^{\frac{1}{2}} = 0$	**M1**	Attempt to solve $a = 0$ and find a value of t.
	$t = \frac{10}{3}$	**A1**	
	Maximum speed = 4.87 ms^{-1} to 3 sf	**B1**	Allow maximum speed as $\frac{8\sqrt{30}}{9}$
		3	

Question	Answer	Marks	Guidance
(c)	For an attempt at integration of *their v*	***M1**	Power of at least one term increased by 1 and the coefficient changed.
	$s = \frac{8}{3}t^{\frac{3}{2}} - \frac{4}{25}t^{\frac{5}{2}}[+C]$	**A1**	Correct s
	Substitute their $t = \frac{10}{3}$ and $t = 10$	**DM1**	Use their $t = 10$ and their $t = \frac{10}{3}(\neq 0)$ correctly.
	Distance = 20.7 m	**A1**	Distance = 20.7479...
		4	