Q	Scheme	Mark	Notes
1a	Use of $v = \frac{\mathrm{d}x}{\mathrm{d}t}$	M1	At least 2 powers going down by 1. Clear division by t is M0
	$v = 6t^2 - 42t + 60$	A1	Correct only
	Set $v = 0$ and correctly solves to obtain 2 values for t	M1	Complete method to obtain both values (implied by correct answers seen) $\left(0 = t^2 - 7t + 10 = (t-2)(t-5)\right)$
	Obtain $t = 2$ and $t = 5$	A1	Correct only. Allow 2.0, 5.0
		[4]	
1b	Distance $= \lvert x_2 - x_1 \rvert + \lvert x_3 - x_2 \rvert$ $\left(= \lvert 45 - 52 \rvert + \lvert 52 - 41 \rvert\right)$	M1	Correct strategy dependent on their t being in $1 < t < 3$
	$= 11 + 7 = 18$ (m)	A1	Correct only
		[2]	
1c	Use of $a = \frac{\mathrm{d}v}{\mathrm{d}t}$	M1	Differentiate their v. Clear division by t is M0. A power going down by 1 $\left(a = 12t - 42\right)$
	Obtain $6\left(\mathrm{m\,s^{-2}}\right)$	A1	Must be positive – the Q asks for magnitude
		[2]	
		(8)	