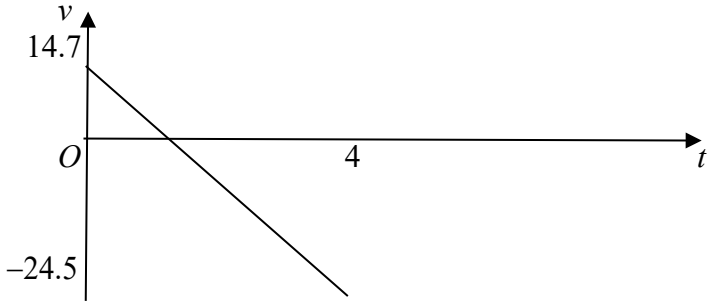
Question Number	Scheme	Marks
2(a)	Complete method to find the total time: e.g. $-19.6 = 14.7t + \frac{1}{2}(-9.8)t^2$ using one equation **OR:** $0 = 14.7 - 9.8t_1 \Rightarrow t_1 = 1.5$ $s_1 = 14.7 \times 1.5 - \frac{1}{2} \times 9.8 \times 1.5^2 = 11.025$ using four equations $30.625 = \frac{1}{2} \times 9.8 \times t_2^{\ 2} \Rightarrow t_2 = 2.5$ $t = t_1 + t_2 = 4$ (s) and many other methods	M1
	There are two A marks for all the equations they use, -1 each error	A1
		M(A)1
	$t = 4$ (s) only	A1
		(4)
(b)	$v^2 = 14.7^2 + 2(-9.8)(-19.6)$ **OR** $v = 14.7 + (-9.8) \times 4$	M1 A1
	Speed = 24.5 or 25 (m s^{-1})	A1
		(3)
(c)	e.g $0^2 = 14.7^2 + 2(-9.8)s$ or $24.5^2 = 2$ x $9.8s$	M1
	$s = 11.025$ (11 or better) $s = 30.625$	A1
	Total distance = $2 \times 11.025 + 19.6$ Total distance = 2 x 30.625 – 19.6	M1
	= 41.7 (3 sf) or 42 (2 sf) (m)	A1
		(4)
(d)		B1 line B1 start pt (0,14.7) **OR** on axes B1**ft** end pt (4,-24.5) **OR** on axes
		(3)
		(14)

	Notes for Question 2	
2(a)	M1 **Complete** method to find the total time	
	A1 M(A)1 There are now two A marks for the equation(s) that they use, -1 for each error.	
	A1 Correct answer **N.B**. If using a quadratic, ignore the other solution, even if it's incorrect. If they combine the 2 solutions in some way, A0	
2(b)	M1 Complete method to find the speed	
	A1 Correct equation(s)	
	A1 Correct answer must be positive	
2(c)	M1 Method to find a relevant distance	
	A1 A correct relevant distance	
	M1 Method to find the total distance	
	A1 Correct answer	
2(d)	B1 Straight line starting on the v-axis and crossing the t-axis (line may be reflected in the t-axis) (B0 if solid vertical line at $t = 4$)	
	B1 Correct appropriate coordinates (start point) Allow these to be marked on the axes.	
	B1**ft** Correct appropriate coordinates (end point) ft on their answers to (a) and (b) Allow these to be marked on the axes.	