Question Number	Scheme	Marks
1(a)	$v^2 = 20^2 - 2g \times (-3)$	M1
	$v = 21$ or 21.4 (m s^{-1})	A1 (2)
1(b)	Complete method to find the total time: e.g. **either:** $-5 = 20t - \frac{1}{2}gt^2$ using one equation **or:** $0 = 20 - gt_1$ $(\Rightarrow t_1 = \frac{100}{49} = 2.040816..)$ $s_1 = (\frac{20+0}{2})t_1$ $(= \frac{1000}{49} = 20.40816...)$ (or $s_1 = 20t_1 - \frac{1}{2}gt_1^2$) using four equations $25.408.. = \frac{1}{2}gt_2^2$ $(\Rightarrow t_2 = 2.2771..)$ $t = t_1 + t_2 = 4.31795..$ and many other methods	M1
	There are two A marks for all the equations they use, -1 each error **N.B.** The second M mark should be treated as an A mark	A1 M(A)1
	$t = 4.3$ or 4.32 (s)	A1
		(6)
	Notes for question 1	
1(a)	M1 **Complete** method to find the speed, must be using 3 or -3 (Allow 9.81 for g or just g), condone sign errors	
	A1 Correct answer (Must have used 9.8 and be positive)	
1(b)	M1 **Complete** method to find the total time, condone sign errors	
	A1 M(A)1 There are now two A marks for the equation(s) that they use, -1 for each error. (Allow 9.81 for g or just g)	
	A1 Correct answer (Must have used 9.8)	
	N.B. No isw for this question **e.g. If they had the correct quadratic but went on to add the roots, this would lose the M mark.**	