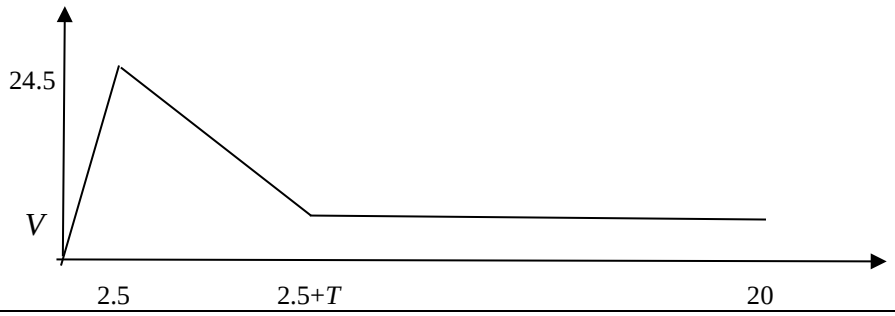
Question Number	Scheme	Marks
7(a)	$v = 2.5\times 9.8 = 24.5\,(\text{m s}^{-1})$ Allow $2.5g$	B1 (1)
7(b)		B1 shape B1 figures (2)
7(c)	$73.75 = \dfrac{(24.5+(24.5-3.9T))T}{2}$ **OR** $73.75 = 24.5T - \dfrac{1}{2}\times 3.9T^2$ **OR** $73.75 = (24.5-3.9T))T + \dfrac{1}{2}\times 3.9T\times T$ **OR** $V^2 = 24.5^2 + 2\times(-3.9)\times 73.75$ and then $5 = 24.5 - 3.9T$ $T = 5$ **N.B.** The second M mark should be treated as an A mark	M1 A1A1M1 A1 (5)
7(d)	Height = Total area under graph	
	$= \left(\dfrac{1}{2}\times 24.5\times 2.5\right) + 73.75 + (20-2.5-5)\times(24.5-3.9\times 5)$	M1A2
	=167 (m) nearest metre.	A1 (4)
		(12)
	Notes for question 7	
7(a)	B1 cao	
7(b)	B1 Correct shape of graph with the second line less steep than the first Graph may be reflected in the *t*-axis. B0 if solid vertical line at $t = 20$	
	B1 All five values correctly placed (allow omission of 0 and appropriate delineators)	
7(c)	M1 for a complete method to obtain an equation, with a correct structure, in T only.	
	A1A1M1(A1) For a correct equation or equations, -1 each error.	
	A1 cao (must be a single answer i.e the other root (7.56) must be clearly rejected.	
7(d)	M1 for a complete method, using the total area under the graph oe, with a correct structure (i.e. triangle + trapezium + rectangle oe), to obtain an expression for the height of H above the ground.	
	A2 For a correct equation, -1 each error.	
	A1 cao	