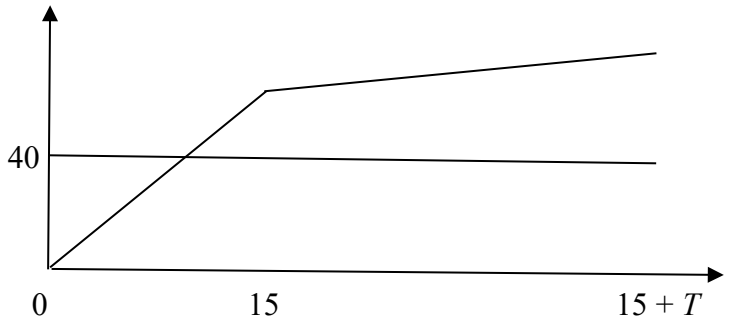
Question Number	Scheme	Marks
5(a)		B1 shape B1 40, 15, $15+T$ Correctly Placed (2)
5(b)	$40 = 4t_1 \Rightarrow t_1 = 10$	M1 A1 (2)
5(c)	60 (m s^{-1})	B1
	$60 + T$ (m s^{-1})	B1 **ft**
	$\frac{1}{2}\times 15\times 60+\frac{1}{2}T(60+60+T)=40(15+T)$ **OR** $\frac{1}{2}\times 15\times 60+60T+\frac{1}{2}T\times T=40(15+T)$ **OR** $\frac{1}{2}(T+T+15)\times 60+\frac{1}{2}T\times T=40(15+T)$	M1 A2
	$T^2+40T-300=0$; $(k=40)$	A1
		(6) **(10)**
	Notes for question 5	
5(a)	B1 Correct graph shapes on same axes with intersection, a horizontal line and 2 lines, both with positive gradient, the second less steep than the first and both ending at the same *t*-value. B0 for a solid vertical line at the end but allow intermediate solid vertical lines.	
	B1 Figs. correctly placed. Allow appropriate delineators.	
5(b)	M1 Complete method to give an equation in t_1 only	
	A1 $t_1 = 10$	
5(c)	B1 60 m s^{-1} seen	
	B1 **ft** $60 + T$ seen or <u>implied</u>; ft on their graph (i.e. on their interpretation of *T*) **N.B.** If they use $s=ut+\frac{1}{2}at^2$, $60 + T$ is not needed	
	M1 Equating distances to give an equation in *T only*, with correct structure (e.g. M0 if a '½' is omitted or a 'section' is omitted but give BOD where possible e.g. treat middle term below as an attempt at a trapezium, with 60 and *T* as the parallel sides $\frac{1}{2}\times 15\times 60+\frac{1}{2}T(60+T)=40(15+T)$ B1B0M1A1A0A0)	
	A2 Correct unsimplified equation -1 e.e.	
	A1 Correct quadratic with $k = 40$	
	N.B. If they take *T* to be the end of the time period (instead of $15 + T$), can score max: (a) B1B0 (b) M1A1 (c) B1B1ft M1A0A0A0 where *T* is replaced consistently by $(T-15)$ in the scheme above.	