Question Number	Scheme	Marks
7(a)		B1 (shape) B1 (*V*) (2)
(b) **(i) (ii)**	$$\frac{V}{t_1} = \frac{1}{2} \implies t_1 = 2V \text{ s}; \ t_2 = 4V \text{ s}$$	M1 A1; A1
(iii)	$$t_3 = 300 - 2V - 4V = 300 - 6V \text{ s}$$	M1 A1 (5)
(c)	$$6300 = \frac{V(300 + 300 - 6V)}{2} \quad \text{or} \quad \frac{1}{2} 2V.V + (300 - 6V).V + \frac{1}{2} 4V.V$$ $$V^2 - 100V + 2100 = 0$$ $$(V - 30)(V - 70) = 0$$ $$V = 30 \text{ or } 70$$ $$V = 30 \ (<50)$$	M1 **A1 ft** A1 M1 A1 A1 (6) **13**
	Notes	
7(a)	B1 for a trapezium with line starting and finishing on the *t*-axis B1 for *V* correctly marked	
(b)	First M1 for a correct method First A1 for *V*/0.5 oe Second A1 for *V*/0.25 oe Second M1 for (300 – sum of previous answers) Allow 5 instead of 300. Third A1 for 300 – 6*V* oe	
(c)	First M1 for using the area under the curve (distance travelled) to form an equation in *V* only. (Allow use of 6.3 but must see ½ used at least once in their expression.) First A1 **ft on their answers in (b)** for a correct equation so must have used 6300 not 6.3 Second A1 for correct equation in form $aV^2 + bV + c = 0$ Second M1 for solving a 3 term quadratic. (<u>Can be implied by correct answers</u>) Second A1 for either 30 or 70	