Question	Answer	Marks	Guidance
12(a)(i)	Area under graph: $\frac{1}{2}(60+40)\times 30+\frac{1}{2}(30+V)\times 30 \quad (=2775)$ or $\frac{1}{2}(20\times 30)+(40+30)+\frac{1}{2}(30+V)\times 30$	**2**	**M1** for attempt to find the area under the graph **Dep M1** on previous M mark for attempt to equate to 2775 and simplify in order to find V or $V-30$
	55	**A1**	
12(a)(ii)	0	**B1**	
12(b)(i)	$v=3\sin 2t \quad (+c)$	**M1**	Must have $\pm 3\sin 2t$
	$10=c$	**M1**	**Dep** for attempt to find $+c$,
	$v=3\sin 2t+10$	**A1**	
12(b)(ii)	$s=-\frac{3}{2}\cos 2t+10t+d$	**M1**	For attempt to integrate *their v*, must have $\pm\frac{3}{2}\cos 2t$
	$d=\frac{3}{2}$	**M1**	**Dep** on previous M mark for attempt to find *d*.
	$s=-\frac{3}{2}\cos 2t+10t+\frac{3}{2}$	**A1**	

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