Question	Answer	Marks	Guidance
10(a)	$\text{p}(2)$: $48+4a+2b+2=0$ $2a+b+25=0$	**B1**	For $2a+b+25=0$ or multiple
	$\text{p}(1)=-2\text{p}(0)$ $a+b+12=0$	**B1**	For $a+b+12=0$
	$a=-13, \quad b=1$	**2**	**M1** for attempt to solve *their* equations in a and b leading to 2 values **A1** for both
10(b)(i)	$\text{p}\left(\frac{1}{2}\right)=\frac{6}{8}-\frac{13}{4}+\frac{1}{2}+2$	**M1**	For attempt to find $\text{p}\left(\frac{1}{2}\right)$ using *their* a and b
	0	**A1**	
10(b)(ii)	$(x-2)(2x-1)(3x+1)$	**2**	**M1** for realising that 2 factors are known and 3rd factor can be got by observation or algebraic long division, or for making use of $x-2$ or $2x-1$ in order to obtain a quadratic factor **A1** Must see all factors together
11(a)	$\angle BOC=1.5$ rad	**B1**	
	$\sin 0.75=\frac{BC/2}{r}$	**M1**	For a complete attempt to find BC – must be using a right-angled triangle to get required result – **Given answer**
	$BC=2r\sin 0.75$	**A1**	
	Perimeter $=2r+2r\sin 0.75+4r+1.5r$	**M1**	**Dep** on first M mark for attempt at perimeter
	$r(7.5+2\sin 0.75)$	**A1**	**Given answer**
11(b)	Area $=(2r+2r\sin 0.75)r-\frac{1}{2}r^2(1.5-\sin 1.5)$ Area $=3.36r^2-0.75r^2+0.4987r^2$	**3**	**M1** for a correct plan **M1** for $(2r+2r\sin 0.75)r$, using *their* $2r\sin 0.75$ **B1** for segment $\frac{1}{2}r^2(1.5-\sin 1.5) \quad =0.251r^2$
	Area $=3.11r^2$	**A1**	

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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