<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td rowspan="6">8(b)(iii)</td><td>Starts with 7 or 9 24</td><td>B1</td><td>May be implied by 12 and 12</td></tr>
<tr><td>Starts with 8 18</td><td>B1</td><td></td></tr>
<tr><td>42</td><td>B1</td><td></td></tr>
<tr><td>Alternative
Ends with 3 18</td><td>(B1)</td><td></td></tr>
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<tr><td rowspan="3">9(a)</td><td>$\frac{dy}{dx}=(2x-1)\times\frac{1}{2}\times4(4x+3)^{-\frac{1}{2}}+2(4x+3)^{\frac{1}{2}}$</td><td>3</td><td>B1 for $\frac{1}{2}\times4(4x+3)^{-\frac{1}{2}}$ oe
M1 for a correct attempt at a product
A1 for all other terms correct</td></tr>
<tr><td>$\frac{dy}{dx}=2(4x+3)^{-\frac{1}{2}}(2x-1+4x+3)$ or equivalent</td><td>M1</td><td>For attempt to simplify to the given form</td></tr>
<tr><td>$\frac{dy}{dx}=\frac{4(3x+1)}{(4x+3)^{\frac{1}{2}}}$</td><td>A1</td><td></td></tr>
<tr><td>9(b)</td><td>$-\frac{1}{3}$</td><td>B1</td><td>FT on their $3x+1=0$</td></tr>
<tr><td rowspan="2">9(c)</td><td>For a complete method using 2nd derivative, or gradient or y values either side or one side of their stationary point e.g.
<table><tr><td>x</td><td>$<-\frac{1}{3}$</td><td>$-\frac{1}{3}$</td><td>$>-\frac{1}{3}$</td></tr><tr><td>$\frac{dy}{dx}$</td><td>–</td><td>0</td><td>+</td></tr></table><table><tr><td>x</td><td>$<-\frac{1}{3}$</td><td>$-\frac{1}{3}$</td><td>$>-\frac{1}{3}$</td></tr><tr><td>y</td><td><-2.15</td><td>-2.15</td><td>>-2.15</td></tr></table></td><td>M1</td><td>Must be using values of $x>-\frac{3}{4}$</td></tr>
<tr><td>Minimum</td><td>A1</td><td>Must be from correct work</td></tr>
</table>

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**	