Question	Answer	Marks	Partial Marks
6(b)	Midpoint $\left(-\frac{3}{5},\ 3\right)$	**B1**	
	Gradient 5	**B1**	
	$y-3=-\frac{1}{5}\left(x+\frac{3}{5}\right)$	**M1**	Attempt at perp bisector using *their* midpoint and perp gradient
	$x-3=-\frac{1}{5}\left(x+\frac{3}{5}\right)$	**M1**	For use of $y=x$ and attempt to solve
	$\left(\frac{12}{5},\ \frac{12}{5}\right)$	**A1**	
7(a)	0.8	**B1**	
7(b)	Sector area = $\frac{1}{2}12^2(0.8)$ 57.6	**B1**	Allow unsimplified
	$\tan 0.4=\frac{AM}{12}$ $AM=12\tan 0.4$ 5.074	**M1**	Attempt at AM using *their* $\frac{\theta}{2}$ Allow unsimplified
	Area of triangle $=\frac{1}{2}(5.074\times 2)\times 12$ 60.88	**M1**	Area of triangle using *their AM*, allow unsimplified
	Shaded area 3.28	**A1**	
7(c)	$\sin 0.4=\frac{AM}{OA}$ $OA=\frac{5.074}{\sin 0.4}$ 13.03	**M1**	Attempt to find *OA* using *their* $\frac{\theta}{2}$ and *their AM*
	Perimeter $=2(1.03)+9.6+2(5.074)$	**M1**	Allow if using *their* $\frac{\theta}{2}$ and *their CM*
	Perimeter = 21.8	**A1**	
8(a)	$\frac{3(2x+3)+3(2x-3)}{4x^2-9}$	**M1**	Must see for M1
	$\frac{12x}{4x^2-9}$	**A1**	

Question	Answer	Marks	Partial Marks
8(b)	$\int \frac{3}{2x-3}+\frac{3}{2x+3}\,\mathrm{d}x$ $=\frac{3}{2}\ln(2x-3)+\frac{3}{2}\ln(2x+3)$	**B2**	B1 for each correct term, having made use of (a)
	$\frac{3}{2}\ln\left(4x^2-9\right)+c$ or $\frac{3}{2}\ln\left((2x-3)(2x+3)\right)+c$ or $\ln\left(4x^2-9\right)^{\frac{3}{2}}+c$	**B1**	
8(c)	$\ln\left(4a^2-9\right)^{\frac{3}{2}}-\ln 7^{\frac{3}{2}}=\ln 5^{\frac{3}{2}}$	**M1**	For correct application of limits, allow equivalent forms
	$4a^2-9=35$	**A1**	For a correct method of dealing with logarithms and eliminating them
	$a=\sqrt{11}$	**M1**	For solving a quadratic equation, dep on first M mark
		A1	
9(a)	Second term: $a+d=-14$	**B1**	
	Sum: $4=a+10d$	**B1**	
	$d=2$	**B1**	
	$a=-16$	**B1**	
	Last term = 24	**B1**	Ft on *their d* and *their a*
9(b)(i)	$ar=27p^2$ $ar^4=p^5$	**B1**	For both equations
	$r=\frac{p}{3}$	**B1**	
9(b)(ii)	$a=81p$	**M1**	M1 for attempt to find a in terms of p
		A1	
	$S_\infty=\frac{81p}{1-\frac{p}{3}}$ or $\frac{243p}{3-p}$	**B1**	Follow through on *their a* and *their r*