Question	Answer	Marks	Guidance
4(b)	$9-\frac{6}{x^2}+\frac{1}{x^4}$	**B1**	
	$(their 64\times 9)+(their -48\times -6)+(their 15)$	**M1**	For considering terms independent of x, must have 3 terms
	879	**A1**	
5	$e^y = mx^2 + c$	**B1**	May be implied by later work
	$10 = 4.74m + c$ $5 = 2.24m + c$	**M1**	For at least one correct equation
	$5 = 2.5m$	**M1**	Dep for attempt to solve for m
	$m = 2,\ \ c = 0.52$	**A1**	For both
	$y = \ln\left(2x^2 + 0.52\right)$	**A1**	
	Alternative $e^y = mx^2 + c$	**(B1)**	May be implied by later work
	Gradient = $m = \frac{10-5}{4.74-2.24}$	**(M1)**	
	$10 = 4.74(their\ m) + c$ or $5 = 2.24(their\ m) + c$	**(M1)**	
	$m = 2,\ \ c = 0.52$	**(A1)**	For both
	$y = \ln\left(2x^2 + 0.52\right)$	**(A1)**	
6(a)	$\frac{\pi}{3}$	**B1**	
6(b)	$\frac{\pi a}{3}+4a$	**2**	**B2 FT** for $\left(their\frac{\pi}{3}\times a\right)+4a$ or **B1 FT** for $their\frac{\pi}{3}\times a$

Question	Answer	Marks	Guidance
6(c)	$\frac{1}{2}(2a)^2 \sin\frac{\pi}{3}$	**B1**	**FT** *their* $\frac{\pi}{3}$
	$\frac{1}{2}a^2\frac{\pi}{3}$	**B1**	**FT** *their* $\frac{\pi}{3}$
	$\sqrt{3}a^2 - \frac{\pi a^2}{6}$	**B1**	**FT** *their* $\frac{\pi}{3}$
7(a)(i)	${}^8C_4$	**M1**	For realisation that there are 4 places left and 8 people available to fill them
	70	**A1**	
7(a)(ii)	1 teacher on committee: 5 ways	**B1**	
	${}^{12}C_8 - 5$	**M1**	
	490	**A1**	
	Alternative 2 teachers: 70 3 teachers: 210 4 teachers: 175 5 teachers: 35	**(2)**	**B1** for 2 correct cases
	490	**(B1)**	
7(b)	$\frac{n!}{(n-5)!} = 6\frac{(n-1)!}{(n-1-4)!}$	**B1**	
	$\frac{n}{(n-5)!} = \frac{6}{(n-5)!}$	**M1**	For simplification of either $n!$ and $(n-1)!$ or 'cancelling out' of the terms of $(n-5)!$
	$n = 6$	**A1**	nfww
8(a)	$b = 2$	**B1**	
	At $(0, 3)$: $3 = a + c$	**B1**	
	At $\left(\frac{5\pi}{6}, 0\right)$: $0 = a\cos\frac{5\pi}{3} + c$ $0 = \frac{a}{2} + c$	**M1**	For use of *their b* and $\left(\frac{5\pi}{6}, 0\right)$
	$a = 6$ $c = -3$	**A1**	For both