Question	Answer	Marks	Partial Marks
11(b)	$\frac{dV}{dw} = 3\frac{\pi}{12}(w+180)^2$ oe	**B1**	
	$\frac{dw}{dt} = \frac{dw}{dV} \times \frac{dV}{dt}$ soi	**M1**	
	$\frac{dw}{dt} = \frac{1}{their\left(\frac{dV}{dw}\right)\Big\vert_{w=10}} \times 10000$	**M1**	
	0.353 [cms^{-1}] or 0.3526[97...] [cms^{-1}] rot to four or more figs	**A1**	
12(a)(i)	$\frac{-(-\sin x)}{\cos^2 x}$ oe	**B2**	**B1** for $\frac{-\sin x}{\cos^2 x}$ oe
	Correct completion to given answer: tan$x$sec$x$	**B1**	dep on all previous marks having been awarded
12(a)(ii)	$\sqrt[4]{e^{3x}} = e^{\frac{3x}{4}}$ oe	**B1**	
	$\frac{3}{\cos x} - \int e^{\frac{3x}{4}} dx = \frac{3}{\cos x} - ke^{\frac{3x}{4}}$ oe	**M1**	
	$\frac{3}{\cos x} - \frac{4}{3}e^{\frac{3x}{4}} + c$ oe	**A1**	
12(b)	$\left[\ln(px+10)\right]_2^5 = \ln 2$	**M1**	
	$\ln(5p+10) - \ln(2p+10) = \ln 2$	**M1**	
	$\ln\left(\frac{5p+10}{2p+10}\right) = \ln 2$	**M1**	
	$5p+10 = 2(2p+10)$	**M1**	
	$p = 10$	**A1**	

© UCLES 2020