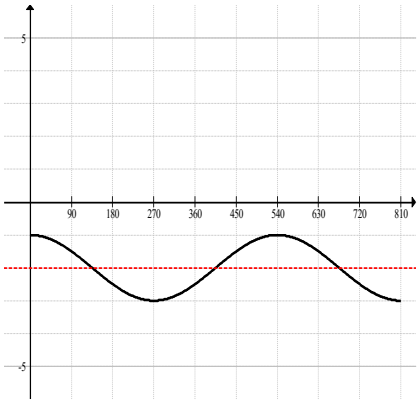
Question	Answer	Marks	Partial Marks
4	$\frac{m}{27}-\frac{29}{9}+\frac{39}{3}+n=0$ oe	**B1**	
	$m - 29 + 39 + n = 6$ oe	**B1**	
	Eliminates one unknown correctly for a pair of linear equations in m and n and solves for one unknown	**M1**	
	$m = 6$, $n = -10$	**A2**	**A1** for either
	[p(2) =] 48 – 116 + 78 – 10 = 0 oe, nfww	**A1**	
5(a)	1	**B1**	
5(b)	$360 \div \frac{2}{3}$ oe	**M1**	
	540	**A1**	If 0 scored, **SC1** for 3π
5(c)	Correct sketch for domain $0° \leqslant x \leqslant 810°$ 	**B2**	**B1** for correct cosine shape from (0, –1) with amplitude 1 for $0° \leqslant x \leqslant 810°$ **B1** for attempt at correct cosine shape with period 540° for $0° \leqslant x \leqslant 810°$ If 0 scored, **SC1** for a fully correct graph for $0° \leqslant x \leqslant 540°$ **Maximum of 1 mark if not fully correct.**
6(a)	$\sqrt{(11-5)^2+(6--4)^2}$ oe	**M1**	
	11.7 or 11.66[19...] rot to 4 or more figs	**A1**	
6(b)(i)	[y =] 1	**B1**	

Question	Answer	Marks	Partial Marks
6(b)(ii)	$m_{AC} = \frac{6--4}{11-5}$ or $\frac{10}{6}$ nfww oe	**B1**	
	$m_{BD} = \frac{-1}{their\ \frac{10}{6}}$ oe	**M1**	
	$y - their\ 1 = -\frac{3}{5}(x-8)$ oe isw	**A1**	**FT** *their* 1 from (b)(i) and *their* perpendicular gradient
6(b)(iii)	$\begin{pmatrix}-5\\3\end{pmatrix}$ and $\begin{pmatrix}5\\-3\end{pmatrix}$	**B2**	**B1** for either If 0 scored, **SC1** for **−5i** + 3**j** and 5**i** −3**j**
7(a)	[Arc length + 2 × tangent length] $18\times\frac{7\pi}{9} + 2\times 18\times\tan\frac{7\pi}{18}$ oe	**M2**	**M1** for [Arc length] $18\times\frac{7\pi}{9}$ oe or [Tangent length] $18\times\tan\frac{7\pi}{18}$ oe or [Tangent length] $\frac{18}{\tan\frac{\pi}{9}}$ oe or [Tangent length] $\frac{18}{\sin\frac{\pi}{9}}\times\sin\frac{7\pi}{18}$ oe
	143 or 142.9 or awrt 142.9 (cm)	**A1**	
7(b)	[Area of kite – area of sector] $18\times their\left(18\times\tan\frac{7\pi}{18}\right) - \frac{1}{2}\times 18^2\times\frac{7\pi}{9}$ oe	**M2**	**FT** *their BC* or *CD* from (a) providing it is not 18 **M1** for [area of sector] $\frac{1}{2}\times 18^2\times\frac{7\pi}{9}$ oe or [area of kite] $18\times their\left(18\times\tan\frac{7\pi}{18}\right)$ oe or [area of kite] $18\times their(18\times\tan 70)$ oe
	494 or 494.3 or awrt 494.3 (cm^2)	**A1**	