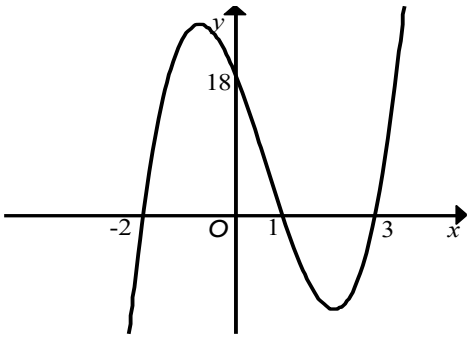
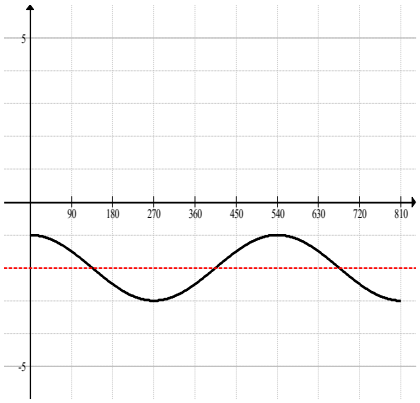
Question	Answer	Marks	Partial Marks
1	$1+4e^{2x}+6e^{4x}+4e^{6x}+e^{8x}$	**B2**	mark final answer for **B2** **B1** for any 3 correct simplified terms in a sum or all 5 simplified terms listed but not summed or for a correct, simplified expansion that is not their final answer or **M1** for a correct unsimplified expansion e.g. $1+4e^{2x}+\frac{4\times3}{2}(e^{2x})^2+\frac{4\times3\times2}{6}(e^{2x})^3+(e^{2x})^4$ If 0 scored, **SC1** for a complete, correct, simplified expansion as final answer found by multiplying out the brackets
2	Correct graph and intercepts  	**B3**	**B1** for correct shape; the ends must extend above and below the x-axis **B1** for correct roots indicated; must have attempted a cubic shape **B1** for correct y-intercept indicated; must have attempted a cubic shape
3	Uses b^2-4ac : $6^2-4(2k-1)(k+1)$	**M1**	
	$-8k^2-4k+40*0$ oe	**M1**	**dep** on first **M1** where * is = or any inequality sign condone one sign or arithmetic slip in simplification
	Factorises or solves *their* 3-term quadratic expression or equation for CVs e.g. $(5+2k)(8-4k)$ oe	**M1**	
	Finds correct CVs: -2.5 oe, 2	**A1**	
	$-2.5 \leqslant k \leqslant 2$	**A1**	mark final answer

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**	