Question	Answer	Marks	Guidance
(a)	Carry out division at least as far as $2x^2 + kx$	**M1**	
	Obtain quotient $2x^2 + 5x - 3$	**A1**	
	Confirm remainder is –6	**A1**	AG – necessary detail needed
		3	
(b)	Integrate to obtain at least k_1x^3 and $k_2\ln(2x+3)$ terms	**M1**	
	Obtain $\frac{2}{3}x^3 + \frac{5}{2}x^2 - 3x - 3\ln(2x+3)$	**A1**	condone absence of $...+c$ and modulus signs
		2	
(c)	State or imply $\mathrm{p}(x) + 6 = (2x+3)(2x^2 + 5x - 3)$	**B1 FT**	FT *their* quotient
	Conclude $(2x+3)(2x-1)(x+3)$	**B1**	
	State or imply $\sin 2\theta = -\frac{2}{3}$ or $\sin 2\theta = -\frac{1}{3}$ or both	**B1 FT**	FT *their* relevant factors
	Carry out correct process to find θ in at least one case	**M1**	
	Obtain 99.7 and 110.9	**A1**	Or greater accuracy and no others between $0°$ and $135°$
		5	