Question	Answer	Marks	Guidance
(a)	Carry out algebraic long division at least as far as $2x^2 + kx$	**M1**	
	Obtain quotient $2x^2 + x + a - 2$	**A1**	
	Confirm remainder is 4	**A1**	AG – necessary detail needed SC B1 for use of remainder theorem to obtain 4
		3	
(b)	Identify integrand as $2x^2 + x + a - 2 + \dfrac{4}{x+2}$	**B1 FT**	Following *their* quotient, may be implied
	Integrate to obtain at least 2 terms from the form of $k_1x^3 + k_2x^2 + k_3\ln(x+2)$	**M1**	for non-zero k_1, k_2, k_3
	Obtain correct $\frac{2}{3}x^3 + \frac{1}{2}x^2 + ax - 2x + 4\ln(x+2)$	**A1**	
	Apply limits correctly and attempt correct process to find a or b	**M1**	Must have the correct form
	Obtain $-\frac{8}{3} + 2a = \frac{22}{3}$ or equivalent and hence $a = 5$	**A1**	
	Obtain $4\ln 3$ and hence $b = 81$	**B1**	
		6	