Q	Marking Instructions	AO	Marks	Typical Solution
1	Circles correct answer	1.1b	B1	4
	Total		**1**	

Q	Marking Instructions	AO	Marks	Typical Solution
2	Circles correct answer	2.3	B1	$n = 6$
	Total		**1**	

Q	Marking Instructions	AO	Marks	Typical Solution
3(a)	Substitutes $x = -1$ or $x = 3$ into f(x) to obtain one equation or uses identity eg f(x) ≡ (x + 1)(x − 3)(ax +b)	3.1a	M1	$x = -1$ $\quad -p - 3 + 8 + q = 0$ $x = 3$ $\quad 27p - 27 - 24 + q = 0$ $p = 2$ and $q = -3$
	Obtains two correct equations by substitution method ACF or obtains a = 2, b = 1	1.1b	A1	
	Solves to find p and q CAO	1.1b	A1	
3(b)	Uses inspection, division by quadratic factor or repeated division or finds third root $x = -\frac{1}{2}$ PI by $(x + \frac{1}{2})$	1.1a	M1	$(x + 1)(x - 3) = x^2 - 2x - 3$ $(x^2 - 2x - 3)(2x + 1)$ $(x + 1)(x - 3)(2x + 1)$
	Completes factorisation	1.1b	A1	
	Total		**5**	

Q	Marking Instructions	AO	Marks	Typical Solution
4	Multiplies by $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}+\sqrt{2}}$	AO1.1a	M1	$\frac{\sqrt{6}}{\sqrt{3}-\sqrt{2}} \times \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}+\sqrt{2}}$
	Correctly evaluates denominator to get 3 − 2 or 1	AO1.1b	A1	$= \frac{\sqrt{18}+\sqrt{12}}{3-2}$
	Evaluates numerator, one term correct $\sqrt{18}\ or\ \sqrt{12}$ or $3\sqrt{2}\ or\ 2\sqrt{3}$	AO1.1b	A1	$\frac{\sqrt{18} + \sqrt{12}}{1}$
	Completes solution CAO	AO2.1	R1	$= \sqrt{9 \times 2} + \sqrt{4 \times 3}$ $= 3\sqrt{2} + 2\sqrt{3}$
	Total		**4**	