Q	Marking instructions	AO	Marks	Typical solution
6(a)	Applies Binomial Expansion formula to x^2 term. At least two of ${}^nC_2$, 3^{n-2} or $(ax)^2$ or a^2 correct.	1.1a	M1	x^2 term = ${}^nC_2\ 3^{n-2}(ax)^2$ $\frac{n(n-1)}{2} \times \frac{3^n}{9} \times a^2 = 4860$ $3^n a^2 n(n-1) = 2 \times 9 \times 4860 = 87480$
	Expresses ${}^nC_2 = \frac{n(n-1)}{2}$ Or 3^{n-2} as $\frac{3^n}{9}$ or $3^n \times 3^{-2}$	1.2	B1	
	Completes reasoned argument to obtain given expression AG	2.1	R1	
	Subtotal		**3**	

Q	Marking instructions	AO	Marks	Typical solution
6(b)(i)	Verifies that $n = 6$	1.1b	B1	Constant term is 3^n $3^6 = 729$ So $n = 6$
	Subtotal		**1**	

Q	Marking instructions	AO	Marks	Typical solution
6(b)(ii)	Substitutes $n = 6$ into formula from **(a)** Or Obtains ${}^6C_2\ 3^4a^2 = 4860$ PI by $a = 2$ or $a = -2$ or $a^2 = 4$	1.1a	M1	$729a^2 \times 6 \times 5 = 87480$ $a^2 = 4$ $a = \pm 2$
	Obtains $a^2 = 4$ ACF PI by $a = 2$ or $a = -2$	1.1b	A1	
	Deduces that $a = -2$	2.2a	R1	Negative x coefficient so $a = -2$
	Subtotal		**3**	

	Question 6 Total		**7**	