Q	Marking instructions	AO	Marks	Typical solution
8	Expresses two consecutive odd numbers as $(2k \pm 1)$ or $(2k + 1)$ & $(2k + 3)$ or $(k \pm 1)$ where k is even or $(k + 1)$ & $(k + 3)$ where k is even OE	2.1	M1	Let the consecutive odd numbers be $(2k + 1)$ and $(2k - 1)$ where k is an integer $(2k + 1)^3 = 8k^3 + 12k^2 + 6k + 1$ $(2k - 1)^3 = 8k^3 - 12k^2 + 6k - 1$ Sum $= 16k^3 + 12k$ $= 4k(4k^2 + 3)$ Factor of 4 shows that this is a multiple of 4
	Expands at least one **odd-numbered** cubic expression – allow one slip	1.1a	M1	
	Expands both of their two different odd-numbered cubic expressions correctly	1.1b	A1	
	Simplifies the sum of their cubic expansions correctly	1.1a	M1	
	Identifies common factor of 4 and completes proof. If $(k \pm 1)$ or $(k + 1)$ & $(k + 3)$ have been used, reference must be made to k being even, to clearly identify the factor of 4. CSO N.B. $(2k + 3)^3 = 8k^3 + 36k^2 + 54k + 27$ $(k - 1)^3 = k^3 - 3k^2 + 3k - 1$ $(k + 1)^3 = k^3 + 3k^2 + 3k + 1$ $(k - 3)^3 = k^3 - 9k^2 + 27k - 27$ $(2k + 1)^3 + (2k + 3)^3 =$ $16k^3 + 48k^2 + 60k + 28$	2.1	R1	
	Question 8 Total		**5**	