5	**(a)**		$n^2 - 1$ or $n^2 + 1$ is even OR n^2 is odd or $n^2 = 2k + 1$ (k integer) OR $\frac{n^2-1}{2} > 0$ or $\frac{n^2-1}{2} \geq 1$ oe eg $n^2 \geq 3$	**B1**	**2.4**	B1 for <u>any</u> of these. Numerical examples insufficient Ignore extra, eg $\frac{n^2+1}{2} > 0 \Rightarrow n^2 > -1$ or $n > \sqrt{-1}$ or $n \neq -1$ Allow ≥ 0 for this mark
			Assuming *n* is a positive integer:			**Not assuming *n* is a positive integer:**
			n is odd oe eg $n = 2k + 1$ (k integer)	**B1**	**2.2a**	
			$n > 1$ (or $n < -1$) or $\|n\| > 1$ or $n \geq \sqrt{3}$ Not $n \geq 0$ NOT $n > \pm 1$ but ignore this if followed by correct, eg $\|n\| > 1$	**B1**	**2.2a**	$n = \sqrt{\text{odd integers} > 1}$ or $n = \sqrt{3}, \sqrt{5}$ etc oe B2 indep 2nd and 3rd B1 marks are independent & can be gained without explanation
				[3]		
5	**(b)**		$n^2 + (\frac{n^2-1}{2})^2$	**M1**	**3.1a**	$(\frac{n^2+1}{2})^2 - (\frac{n^2-1}{2})^2$ correct expression
			$= n^2 + \frac{n^4-2n^2+1}{4} = \frac{n^4+2n^2+1}{4}$			$= \frac{n^4+2n^2+1}{4} - \frac{n^4-2n^2+1}{4} = \frac{4n^2}{4}$
			$= \left(\frac{n^2+1}{2}\right)^2$	**A1**	**1.1**	$= n^2$ Correctly obtained
				[2]		

Question			Answer	Mark	AO	Guidance
5	(b)	ctd	$n^2 + (\frac{n^2-1}{2})^2 = \left(\frac{n^2+1}{2}\right)^2$ $n^2 + \frac{n^4-2n^2+1}{4} = \frac{n^4+2n^2+1}{4}$ $\frac{4n^2+n^4-2n^2+1}{4} = \frac{n^4+2n^2+1}{4}$	**M1** **A1**		