5	**(a)**		eg $9^2 + 4 = 85$ and 85 is multiple of 5 or $85 = 5\times17$ or $85 \div 5 = 17$ or 85 has a factor of 5 (or 17)	**B1** **[1]**	**1.1**	oe Not just "and 85 is not prime" One correct example and one incorrect B1	Condone eg $9^2+4 = 85 \div 5=17$
5	**(b)**		$(2k)^2 + 1 = 4k^2 + 1$ (k an integer) or eg $(2k + 2)^2 + 1 = 4k^2 + 8k + 5$ which is not a multiple of 4	**B1**	**2.2a**	Allow any letter, even n	Allow omission of "(k an integer)" in both places
			$(2k + 1)^2 + 1 = 4k^2 + 4k + 1 + 1$ (k an integer) $= 4(k^2 + k) + 2$ or $4k^2 + 4k + 2$	**M1** **A1***	**1.1** **1.1**	Attempt expand & add 1, eg $4k^2+1+1$: M1 Must see one of these forms	Same marks for $(2k - 1)^2 + 1$
			Any sensible explanation why this is not mult of 4 eg This is of the form 4 × integer + 2 $4k^2$ & $4k$ are mults of 4 but when + 2, not mult of 4	**A1** dep*	**2.2a**	eg $4(k^2 + k)$ is a multiple of 4 2 is not a multiple of 4 $k^2 + k + \frac{1}{2}$ not an integer Other correct methods may be seen	Not just "This is not a mult of 4" Not "This is mult of 2, not of 4" Numerical examples: no mks
			Alternative method n even n^2 is mult of 4, hence $n^2 + 1$ is not mult of 4 or n^2 is even, so $n^2 + 1$ is odd so not mult of 4	**B1**			
			n even, $n + 1$ is odd. $(n + 1)^2 + 1$ $= n^2 + 2n + 2$ n^2 and $2n$ are mults of 4, hence $n^2 + 2n + 2$ is not	**M1** **A1** **A1** **[4]**			