

8	(a)	$2^3 < 3^2$	B1 [1]	or eg $2^3 \geq 3^2$, $8 \geq 9$ Not true. Allow if poorly expressed.
8	(b)	$n(n + 2) + 1$ $(= n^2 + 2n + 1)$ $= (n + 1)^2$ But n is odd so $n + 1$ is even, so this is (even number) ²	M1 A1 M1 A1	

8	(b) ctd	<p>Alternative Method 1 Let $m = 2k - 1$ and $n = 2k + 1$ where k is a positive integer $(2k - 1)(2k + 1) + 1$ $(= 4k^2)$ $= (2k)^2$ or $2^2 \times k^2$ This is (even number)²</p>	<p>M1 M1 A1 A1</p>	<p>Allow $2n - 1$ and $2n + 1$ Condone omission of “where k is a positive integer”</p>
		<p>Alternative Method 2 Let $m = 2k + 1$ and $n = 2k + 3$ where k is a positive integer $(2k + 1)(2k + 3) + 1$ $(= 4k^2 + 8k + 4 = 4(k^2 + 2k + 1))$ $= [2(k + 1)]^2$ or $2^2 \times (k + 1)^2$ This is (even number)²</p>	<p>M1 M1 A1 A1</p>	<p>Allow $2n + 1$ and $2n + 3$ Condone omission of “where k is a positive integer”</p>
			[4]	