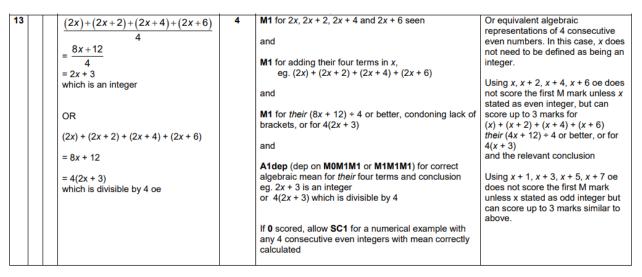
#### **ODD AND EVEN**

#### OCR GSCE – Tuesday 11 June 2019 – Paper 6 (Calculator) Higher Tier

1.



#### OCR GSCE – Thursday 8 June 2017 – Paper 5 (Non - Calculator) Higher Tier

2.

21	(a)	2 <i>n</i> is even and adding 1 gives an odd number oe	1	Must interpret the 2 <i>n</i> as even or not odd and then the +1 giving odd oe	Accept ' $2n$ is a multiple of 2' for $2n$ is even Accept 2 times any number is even oe for $2n$ is even (as $n$ is defined as an integer in the stem of question) Accept 'next number' or 'odd' for +1 Do not accept e.g. $2n$ = even $2n$ +1 is odd (does not interpret the 1)
	(b)	(2n + 3) <sup>2</sup> - (2n + 1) <sup>2</sup> oe	M2	Allow $(2n + a)^2 - \{2n + (a \pm 2)\}^2$ where a is odd Or <b>M1</b> for $2n - 1$ or $2n + 3$ used with $2n + 1$ Allow $\{2n + (a \pm 2)\}$ used with $(2n + a)$ where a is odd	Could use alternate correct expressions for consecutive <b>odd</b> numbers. Allow M and A marks if correct. Could reverse the algebraic terms <i>their</i> ( $2n + 1$ ) <sup>2</sup> – ( $2n + 3$ ) <sup>2</sup> leading to – $8n - 8$ , allow method and accuracy marks if correct. If brackets omitted allow recovery for M2 if correct expansion
		$4n^2 + 12n + 9 - 4n^2 - 4n - 1$	M2	Dep on M2 for expanding brackets in <i>their</i> expressions. Or M1indep for one correct expansion of <i>their</i> brackets	If seen alone and completely correct then implies previous M2 Allow $4n^2 + 12n + 9 - (4n^2 + 4n + 1)$
		8 <i>n</i> or 8 <i>n</i> + 8 = 8( <i>n</i> + 1) Or 8 <i>n</i> + 8 is a multiple of 8 oe	A1	With no errors or omissions seen. Correct for <i>their</i> two consecutive odd number expressions After <b>0</b> scored, Allow <b>SC1</b> for two correctly evaluated numeric examples of subtracting consecutive odd squares isw	Accept $-8n$ or $-8n - 8$ oe if subtraction is reversed NB: M2M1A1 not possible – must earn all method marks for A mark e.g. $7^2 - 5^2 = 24$ and $3^2 - 5^2 = -16$

# OCR GSCE – Sample Papers – Paper 4 (Calculator) Higher Tier

3.

11	(a)	Any correct reason	1		Exemplar responses:
			1 AO2.4a		-1 and 1 both odd and either side of 0
					Or can be divided by 2 exactly
					Or numbers that end in 0 are even
					Or zero remainder when divided by 2
					Or next number in pattern of even numbers 8 6 4 2
					Or added to an even number it gives even answer and added to odd number gives odd answer
	(b)	e.g. $a^{2} + b^{2} = c^{2}$ $a = 2x$ and $b = 2y$ implies $c^{2} = 4x^{2} + 4y^{2}$ So <i>c</i> is even	3 1 AO2.1a 1 AO2.4b 1 AO3.2	B1 for use of Pythagoras' theorem M1 for even × even = even soi	

### OCR GSCE – Sample Papers – Paper 6 (Calculator) Higher Tier

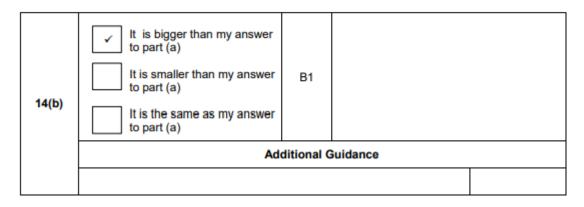
4.

8	(a)	<i>x</i> , <i>x</i> + 1, <i>x</i> + 2, <i>x</i> + 3	1	accept correct alternatives	
		x + (x + 1) + (x + 2) + (x + 3) or $4x + 6$	1		
		2( <i>x</i> + 3)	1		
			3 AO2.4b		
	(b)	e.g. 1 + 2 + 3 + 4	1		
		4x + 6 is not a multiple of 4	1	Allow e.g. 1 + 2 + 3 + 4 = 10 is not a	
			2 AO2.4a	multiple of 4	

AQA GSCE – Thursday 6 June 2019 – Paper 2 (Calculator) Higher Tier

5.

	(Ali) 5 × 4 × 3 or 60 or (Mel) 4 × 3 × 2 or 24	M1	oe eg (Ali) 5 × 12 or (l	Mel) 4!		
	$5 \times 4 \times 3 - 4 \times 3 \times 2$ or 60 - 24	M1dep	oe implies M2			
14(a)	36 with no incorrect method seen	A1	SC1 answer 61			
	Additional Guidance					
	Ignore any listing of possible codes					
	48 - 12 = 36 (incorrect method seen		M0M0A0			
	1st M1 Further work	MO				
	eg1 60 followed by 60 × 3					
	eg2 6 × 4 = 24 followed by 24 × 2 = 4					



### AQA GSCE – Thursday 8 November 2018 – Paper 2 (Calculator) Higher Tier

6.

	could be even or odd	B1			
17	Additional Guidance				

# AQA GSCE – Sample Paper 2 (Calculator) Higher Tier

7.

	$6c(c^2+5)$ or $3(c^2+5)$	M1	
16	$\frac{6c(c^2+5)}{3(c^2+5)}$	M1	This mark implies first M1
	2c and multiple of 2 so even	A1	oe statement Must see method