CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

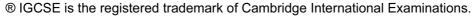
0607/62 Paper 6 (Extended), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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Abbreviations

cao correct answer only

dep dependent

FT follow through after error isw ignore subsequent working

oe or equivalent

rot rounded or truncated

SC Special Case

nfww not from wrong working

soi seen or implied

A	INVES	TIGATION STARS		
Q	Question	Answer	Mark	Part Marks
1	(a)	360 ÷ 7 oe	1	
	(b)	$[A=] \frac{360}{n} \text{oe}$	1	
2	(a)	102.85 to 102.9 or 103	2	M1 for $\frac{720}{7}$ oe
	(b) (i)	3	1	
	(ii)	3 revolutions oe and 7 angles oe	1	
	(iii)	$\frac{4 \times 360}{7} > 180$ oe	1	
3		$\frac{2 \times 360}{5}$ or equivalent calculation	1	
4	(a)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	2	B1 for 5 correct cells
		$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
	(b)	$[A=]\frac{360n}{2n+1} \text{oe}$	1	

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	Question	Answer	Mark	Part Marks
	(c)	25	3	B2 for $[n=]$ 12 soi or M1FT for their $\frac{360n}{2n+1} = 172.8$ C opportunities
5	(a)	[1], 2, 3, 4, 5	2	Accept in suitable calculations e.g. $\frac{2}{11} \times 360$ Deduct 1 for extras and 1 for each omission If 0 scored SC1 for 4 or 5 with no working
	(b)	$\frac{6}{15} = \frac{2}{5} \text{ soi}$	1	
	(c)	48, 96, 168 cao	2	B1 for two correct values of A only or B1 for three correct values plus extras less than 180° or B1 for 2, 4 and 7 [revolutions] soi C opportunity
Co	mmunicatio	n seen in one of 4(c) (two possible places) or 5(c)	1	

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Ç	Question	Answer	Mark	Part Marks
1	(a)	80[kg]	1	
	(b)	1.5[m] or 150cm	1	
	(c)	[M=] 100h - 100 oe seen	1	
	(d)	Straight line with positive gradient	1	
		approx through (1.5, 50) and (2, 100)	1	C opportunity
2	(a)	$M = kh^2$ or $M \propto h^2$ $88 = k \times (2^2 \text{ or } 4)$	1 1	If 0 scored SC1 for 88 = 22 × 4 oe C opportunity
	(b)	$22 \times 1.5^2 = 49.5$ oe	1	
	(c)	1.87[m] or 187cm	1	Condone 1.9[m] but not 190cm
				C opportunity
3	(a)	1.485 to 1.49 [m] or 148.5 to 149 cm	1	Condone 3.06 as a second answer
	(b)	Simple $(100h - 100)$ and		
		correct conclusion	1	C opportunity
4	(a)	$78 = k \cdot 1.84^n$ isw $50 = k \cdot 1.54^n$ isw	1	
	(b)	$\frac{78}{50} = \frac{k1.84^n}{k1.54^n}$	1	
	(c)	$\frac{\log 1.56}{\log 1.195} \text{ or } \log_{1.195} 1.56$	1	
	(d)	17	2	M1 for $78 = k \times 1.84^{2.5}$ or $50 = k \times 1.54^{2.5}$ or B1 for 16.98 to 16.99
				C opportunity
	(e)	exponential curve	1	C opportunity
5		1.67[] or 1.68 [m]	1FT	FT their 17 rot to at least 2dp C opportunity
Coi	mmunication	on seen in four of 1(d), 2(a), 2(c), 3(a), 4(d),	2	1 mark if seen in two