

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.

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Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	62

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
nfw	not from wrong working
soi	seen or implied

A INVESTIGATION		STARS																					
Question	Answer	Mark	Part Marks																				
1 (a)	$360 \div 7$ oe	1																					
(b)	$[A =] \frac{360}{n}$ 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)	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>3</td> <td>1</td> <td>$\frac{1}{3} \times 360$</td> <td>120</td> </tr> <tr> <td>5</td> <td>2</td> <td>$\frac{2}{5} \times 360$</td> <td>144</td> </tr> <tr> <td>7</td> <td>3</td> <td>$\frac{3}{7} \times 360$</td> <td>154.3</td> </tr> <tr> <td>9</td> <td>4</td> <td>$\frac{4}{9} \times 360$</td> <td>160</td> </tr> <tr> <td>11</td> <td>5</td> <td>$\frac{5}{11} \times 360$</td> <td>163.6</td> </tr> </table>	3	1	$\frac{1}{3} \times 360$	120	5	2	$\frac{2}{5} \times 360$	144	7	3	$\frac{3}{7} \times 360$	154.3	9	4	$\frac{4}{9} \times 360$	160	11	5	$\frac{5}{11} \times 360$	163.6	2	B1 for 5 correct cells
3	1	$\frac{1}{3} \times 360$	120																				
5	2	$\frac{2}{5} \times 360$	144																				
7	3	$\frac{3}{7} \times 360$	154.3																				
9	4	$\frac{4}{9} \times 360$	160																				
11	5	$\frac{5}{11} \times 360$	163.6																				
(b)	$[A =] \frac{360n}{2n+1}$ oe	1																					

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	62

Question	Answer	Mark	Part Marks
(c)	25	3	B2 for $[n=]$ 12 soi or M1FT for <i>their</i> $\frac{360n}{2n+1} = 172.8$ 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)	$\frac{6}{15} = \frac{2}{5}$ 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
Communication seen in one of 4(c) (two possible places) or 5(c)		1	

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	62

B MODELLING		BODY MASS	
Question	Answer	Mark	Part Marks
1 (a)	80[kg]	1	C opportunity
	(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	
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 $88 = 22 \times 4$ oe C opportunity
	(b) $22 \times 1.5^2 [= 49.5]$ oe	1	
	(c) 1.87[m] or 187cm	1	
3 (a)	1.485 to 1.49 [m] or 148.5 to 149 cm	1	Condone 3.06 as a second answer C opportunity
	(b) Simple $(100h - 100)$ and correct conclusion	1	
4 (a)	$78 = k 1.84^n$ isw $50 = k 1.54^n$ isw	1	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
	(b) $\frac{78}{50} = \frac{k1.84^n}{k1.54^n}$	1	
	(c) $\frac{\log 1.56}{\log 1.195}$ or $\log_{1.195} 1.56$	1	
	(d) 17	2	
	(e) exponential curve	1	
5	1.67[...] or 1.68 [m]	1FT	FT <i>their</i> 17 rot to at least 2dp C opportunity
Communication seen in four of 1(d), 2(a), 2(c), 3(a), 4(d), 4(e) or 5		2	1 mark if seen in two