

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

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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
- nfwf 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%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">3</td> <td style="width: 15%;">1</td> <td style="width: 20%;">$\frac{1}{3} \times 360$</td> <td style="width: 50%;">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> </tbody> </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																					

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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	

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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