

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/63

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2015 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

® IGCSE is the registered trademark of Cambridge International Examinations.


Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0607	63

Abbreviations

cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfw	not from wrong working
soi	seen or implied

A INVESTIGATION				
1	(a)	561 601 641	2	B1 for one from 561, 601 and 641 If 0 scored SC1 for $24^2 - 3 \times 5$, $25^2 - 4 \times 6$, $26^2 - 5 \times 7$
	(b)	[T ₉ =] 801	1	C opportunity
	(c)	40n + 441 oe	2	B1 for 40n + k or jn + 441 (j > 0) or B1 for (n + 21) ² and B1 for -n(n + 2) or better
	(d)	55	1FT	FT their (c) if answer is linear C opportunity
	(e)	All T-results end in 1 oe [and this ends in 3 oe] or [n =] 10.05 or 843 – 441 in not divisible by 40 oe	1	
2	(a)	11 or eleven	1	
	(b)	(top right) n + 2 oe (bottom) n + 23 oe	1 1	
	(c)	[(n + 23)(n + 23) – n(n + 2) oe] n ² + 46n + 529 – n ² – 2n	2	B1 for n ² + 46n + 529 B1 for – n ² – 2n
3		48n + 625	2	M1 for (n + 25) ² – n(n + 2)
4	(a) (i)	(n + 1 + 2w) ² – n(n + 2) n ² + n + 2w + n + 1 + 2w + 2wn + 2w + 4w ² – n ² – 2n	M1 A1	or better Methods based on extending sequences or justifying by substitution do not score
	(ii)	15	2	M1 for attempt at solving 4w ² + 40w + 1 = 1501 by factorising, formula, sketch, completing the square C opportunity
	(b)	[even +] even + 1 = odd	1	No wrong statements
Communication seen in one of 1(b), 1(d), 4(a)(ii)			1	

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0607	63

B MODELLING				
1	(a)	180	1	C opportunity
	(b) (i)	131.4[0]	1FT	FT <i>their</i> (a) $\times 0.2 \times 365 \div 100$ without wrong working C opportunity
	(ii)	$\frac{150 \times 60 \times 365 \times [0].2}{1000 \times 100} \times d$ oe	1	
	(iii)	24	1	C opportunity
2	(a)	$\tan 60 = \frac{10}{AB}$ or $\tan 30 = \frac{AB}{10}$ oe	1	$\frac{10 \sin 30}{\sin 60}$ or $\frac{1}{3} \times \frac{30}{\tan 60}$ etc.
	(b)	Anything rounding to 166	4	B1 for $\frac{30}{\tan 60}$ [=17.3..]oe B1 for [Area =] $(144 + k) \times \frac{20}{2}$ oe or one trapezium (side 144) calculated using rectangles and triangles M1FT for <i>their</i> area $\times \frac{60}{1000}$ oe
	(c)	$[DE =] 150 - \frac{30}{\tan 60}$ $\frac{BC + DE}{2} \times \frac{d \times 60}{1000}$ oe	1	
	(d)		1	[Almost] linear through (0, 0) C opportunity
	(e)	18[.1...]	1	C opportunity

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0607	63

3	(a)	$0.001095dw \left(300 - \frac{(30-d)}{\tan 60} - \frac{30}{\tan 60} \right)$	2	Accept $\frac{0.03d \times 365 \times w}{100 \times 100} \left(300 - \frac{(30-d)}{\tan 60} - \frac{30}{\tan 60} \right)$ or better M1 for 2 of the operations $\frac{\times 365 \times w}{100}$
	(b) (i)	$0.001095dw \left(300 - \frac{(30-d)}{\tan \theta} - \frac{30}{\tan \theta} \right)$	1FT	FT their 3(a)
	(ii)	Decreases oe	1	
	(iii)	No place to sit oe or Base of bath sloping oe	1	Not stable Not enough water
	(c)	Anything truncating to 155	1FT	FT their b(i) C opportunity
Communication seen in two of 1(a) , 1(b)(i) , 1(b)(iii) , 2(d) , 2(e) , 3(c)			1	