GradeMax

www.PapaCambridge.com

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.

CAMBRIDGE

PA CAMBRIDGE

GradeMax

www.PapaCambridge.com

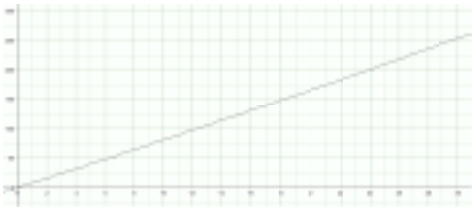
Abbreviations
cao correct answer only
dep dependent
FT follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
nfww not from wrong working
soi seen or implied

A	**INVESTIGATION**			
1	**(a)**	561 601 641	**2**	**B1** for one from 561, 601 and 641 If 0 scored **SC1** for $24^2 - 3\times5$, $25^2 - 4\times6$, $26^2 - 5\times7$
	(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)	[$(n + \mathbf{23})(n + \mathbf{23}) - n(n + \mathbf{2})$ oe] $n^2 + 46n + 529 \quad - n^2 - 2n$	**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**	

PAPA CAMBRIDGE

GradeMax

www.PapaCambridge.com

B		**MODELLING**		
1	**(a)**	180	**1**	**C** opportunity
	(b) (i)	131.4[0]	**1FT**	**FT** *their* **(a)** × 0.2 × 365 ÷ 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 *their* area × $\frac{60}{1000}$ oe
	(c)	$[DE =]\ 150 - \frac{30}{\tan 60}$	**1**	
		$\frac{BC + DE}{2} \times \frac{d \times 60}{1000}$ oe	**1**	
	(d)		**1**	[Almost] linear through (0, 0) **C** opportunity
	(e)	18[.1…]	**1**	**C** opportunity

PAPA CAMBRIDGE

GradeMax

www.PapaCambridge.com

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**	

PAPA CAMBRIDGE