CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/63 Paper 6 (Extended), maximum raw mark 40

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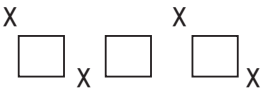
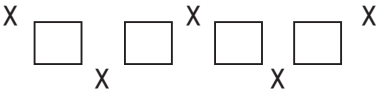
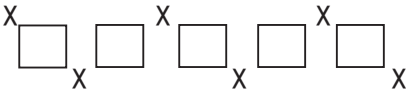
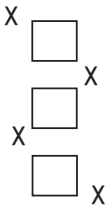
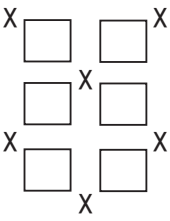
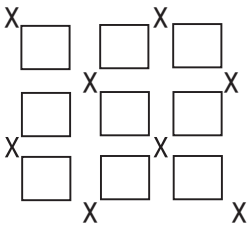
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Abbreviations

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	**SECURITY CAMERAS**		
Question	**Answer**	**Mark**	**Part Marks**
1 (a) (i)	 oe	**1**	
(ii)	 oe	**1**	
(iii)	 oe	**1**	
(b)	$n + 1$	**1**	
2 (a) (i)	 oe [Minimum =] 4	**1**	**B1** for diagram **and** 4
(ii)	 oe	**1**	
(iii)	 oe [Minimum =8]	**1**	
(b)	$2n + 2$ oe	**1**	**C** opportunity

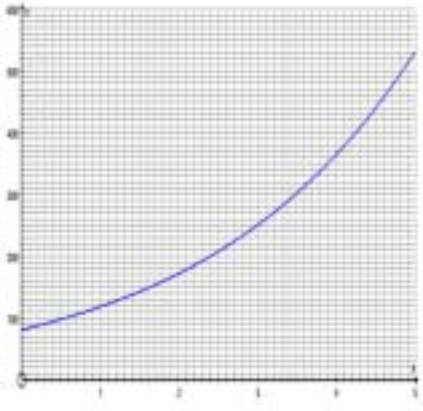
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A INVESTIGATION SECURITY CAMERAS

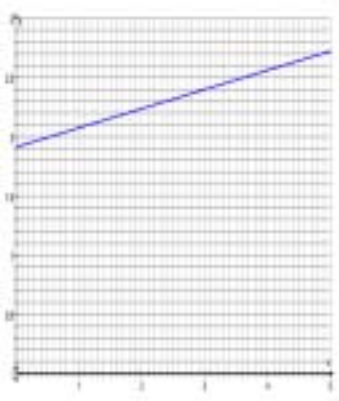
Question	Answer	Mark	Part Marks
3	9 12	**1** **1**	 **C** opportunity
4 (a)	<table><tr><td></td><td colspan="6">Number of squares in each row</td></tr><tr><td></td><td>1 square</td><td>2 squares</td><td>3 squares</td><td>4 squares</td><td>5 squares</td><td>*n* squares</td></tr><tr><td>One row</td><td></td><td></td><td></td><td></td><td>**6**</td><td></td></tr><tr><td>Three rows</td><td></td><td></td><td>**8**</td><td>**10**</td><td>**12**</td><td></td></tr><tr><td>Five rows</td><td></td><td></td><td></td><td>**15**</td><td>**18**</td><td></td></tr><tr><td>Seven rows</td><td></td><td>**12**</td><td>**16**</td><td>**20**</td><td>**24**</td><td>**4*n*** + **4**</td></tr></table> oe	**2**	**B1** for 8, 9 or 10 number cells correct **B1** for $4n + 4$ oe
(b)	$\frac{1}{2}(r+1)n + \frac{1}{2}(r+1)$ oe	**1**	
(c)	1, 3, 7, 15	**1**	**C** opportunity
5 (a)	10 13	**1**	**C** opportunity
(b)	$\frac{3n}{2} + 1$	**1**	**C** opportunity
6 (a)	<table><tr><td></td><td colspan="5">Number of squares in each row</td></tr><tr><td></td><td>2 squares</td><td>4 squares</td><td>6 squares</td><td>8 squares</td><td>*n* squares</td></tr><tr><td>Two rows</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Four rows</td><td></td><td></td><td>**17**</td><td>**22**</td><td></td></tr><tr><td>Six rows</td><td></td><td>**17**</td><td></td><td>**31**</td><td></td></tr><tr><td>Eight rows</td><td></td><td>**22**</td><td>**31**</td><td></td><td>$\frac{9n}{2} + 4$</td></tr></table>	**2**	**B1** for 4, 5 or 6 number cells correct **B1** for $\frac{9n}{2} + 4$ oe
(b)	$\frac{1}{2}(r+1)n + \frac{1}{2}r$ oe	**1**	
Communication seen in two of **2(b)**, **3**, **4(c)**, **5(a)**, **5(b)**		**1**	

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B MODELLING BACTERIA

Question	Answer	Mark	Part Marks
1 (a)	Correct curve between $x = 1$ and $x = 5$ 	2	**B1** for 5 points correctly plotted (within 1 mm) **B1** for curve through plotted points (within 1 mm)
(b)	Answer in range 80 to 100	1	
2 (a)	$[n =] pq^x$	1	
(b)	$[q =]$ 1.48	1FT	**FT** $n = px^2 + q$ in *their* (a) **C** opportunity
(c)	$[p =]$ 77.1[...]	1FT	**FT** *their q* in $n = pq^x$ Or *their q* in $n = px^2 + q$ **C** opportunity
(d) (i)	Answer in range 1099 to 1200	1FT	**FT** *their p* and *their q* in non-linear models **C** opportunity
(ii)	77[.1...]	1FT	
(iii)	Correct statement about similarity of answers	1FT	**FT** *their* 1(b) and *their* 2(d)(ii)

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B MODELLING BACTERIA			
Question	**Answer**	**Mark**	**Part Marks**
3 (a)	2.23 2.4[0] 2.57 2.72	**2**	**B1** for accuracy to 3 s.f . and **B1** for all correct if rounded
(b)	3[.0] 2.4[…]	**1**	Correct to 1d.p.
(c)		**2FT**	**B1FT** for 5 correctly plotted points **B1FT** for correct ruled line between $x = 1$ and $x = 5$ through (3, *their* 2.4)
(d) (i)	1.9 to 1.95	**1**	**FT** *their* correct line of best fit if outside range
(ii)	0.15 to 0.17	**1**	**C** opportunity
(e)	890 to 1390	**1**	**C** opportunity
(f)	79 to 90	**1**	
4	Correct statement comparing the <u>models</u>	**1FT**	**FT** *their* 3(e) and *their* 2(d)(i)
Communication seen in two of **2(b)**, **2(c)**, **2(d)(i)**, **3(d)(ii)**, **3(e)**		**1**	

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