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CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

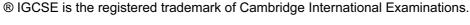
0607/53 Paper 5 (Core), maximum raw mark 24

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 October/November 2014 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.





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Page 2	Mark Scheme	Syllabus	P. J. Mark
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							1	T
(a)	8						1	
(b)		Response implying some faces hidden within the large cube					1	bod for 'can't see'
(c)	24	24					1FT	FT 3 × <i>their</i> (a)
(a)	27	27					1	
(b)	8	8					1	
(c)	6	6					1	
(a)	4 by 4	4 by 4 by 4 cube drawn				2	If 0 scored, B1 for one correct face	
(b) (i)	8						1	C opportunity
(ii)	24						1	
	Size	Total number	Number of small cubes with					
	of cube	of small cubes	0 crosses	1 cross	2 crosses	3 crosses		
	2 by 2 by 2	8	0	0	<u>0</u>	<u>8</u>		
	3 by 3 by 3	27	1	6	12	8		B1 for 0 in row 1 column 5
	4 by 4 by 4	64	8	24	24	8		B1 for 8 in row 1 column 6 B1 for 125 in row 4 column 2
	5 by 5 by 5	125	27	54	<u>36</u>	8	4	B1 for 36 in row 4 column 5
	(b) (c) (a) (b) (c) (a) (b) (i)	(b) Respondance of large of la	(b) Response implying large cube (c) 24 (a) 27 (b) 8 (c) 6 (a) 4 by 4 by 4 cube (b) (i) 8 (ii) 24 Total number of cube small cubes 2 by 2 by 2 by 2 by 2 by 2 by 3 by 3 by	(b) Response implying some falarge cube (c) 24 (a) 27 (b) 8 (c) 6 (a) 4 by 4 by 4 cube drawn (b) (i) 8 (ii) 24 Total number of cube small cubes 0 crosses	(b) Response implying some faces hid large cube (c) 24 (a) 27 (b) 8 (c) 6 (a) 4 by 4 by 4 cube drawn (b) (i) 8 (ii) 24 Total number of small cubes Torosses Toross	(b) Response implying some faces hidden within large cube (c) 24 (a) 27 (b) 8 (c) 6 (a) 4 by 4 by 4 cube drawn (b) (i) 8 (ii) 24 Total number of small cubes of cube small cubes of small cubes of cubes 0 1 2 crosses 2 by 2 by 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(b) Response implying some faces hidden within the large cube (c) 24 (a) 27 (b) 8 (c) 6 (a) 4 by 4 by 4 cube drawn (b) (i) 8 (ii) 24 Size of cube small cubes with cubes of small cubes with cubes crosses 2 by 2 by 2 by 2 by 2 by 2 by 3 by 3 by	(b) Response implying some faces hidden within the large cube (c) 24 1FT (a) 27 (b) 8 (c) 6 1 (a) 4 by 4 by 4 cube drawn 2 (b) (i) 8 (ii) 24 1 Number of small cubes with number of small cubes with cubes with cubes crosses crosses 2 by

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Page 3	Mark Scheme	Syllabus	P. My
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5 (a)	1 small cube with 0 crosses gives 0 crosses 6 small cubes with 1 cross gives 6 crosses 12 small cubes with 2 crosses gives 24 crosses 8 small cubes with 3 crosses gives 24 crosses Total = 54 crosses	2	B1 for either 24
(b)	9 54	1 1FT	FT their 9 × 6
(c)	96	1	C opportunity
6 (a)	$(n-2)^3$ oe isw	2	B1 for $[kn] - 2$ Or B1 for n^3 soi C opportunity
(b)	$6(n-1)^2$ oe isw	1	Accept $6(n-2)^2$ from cubes C opportunity
(c)	12(n-1) oe isw	1	12(<i>n</i> – 2) from cubes C opportunity
	Communication in two of 3(a) , 5(c) , 6(a) , 6(b) or 6(c)	1	