



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/21

Paper 2 (Extended)

May/June 2016

MARK SCHEME

Maximum Mark: 40

Published

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.

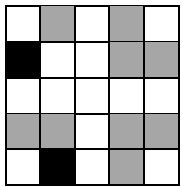
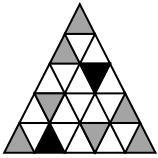
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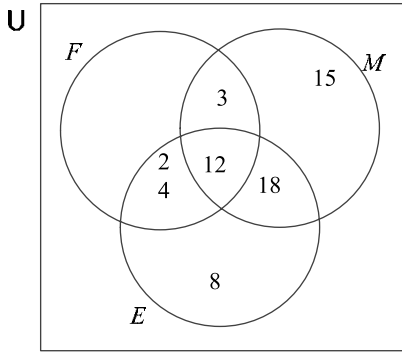
Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2016	0607	21

Abbreviations

awrt	answers which round to
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

Question	Answer	Mark	Part Marks
1 (a)	200	1	
(b)	$\frac{11}{20}$ oe	2	M1 for $\frac{a}{20} - \frac{b}{20}$ with $a = 16$ or $b = 5$
2 (a)		1	
(b)		1	
3	$\frac{10 \times 300}{50 + 100}$ 20	M1 A1	Accept any 3 from 4
4 (a)	$2^6 \times 3^8 \times 5^2$	1	
(b)	$2^3 \times 3^2$	1	
(c)	$2^5 \times 3^4 \times 5^{[1]} \times 7^3$	2	B1 for 3 of 4 factors correct
5 (a)	0.13, 0.36, 0.32, 0.19 oe	2	B1 for 2 or 3 correct
(b) (i)	1600	1	
(ii)	Sufficient trials oe	1	
6	$x = 14$	3	M2 for $3x - 2x - 2 = 12$ or M1 for $\frac{3x - 2(x+1)}{6} = 2$ or better

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2016	0607	21

Question	Answer	Mark	Part Marks
7 (a)		2	B1 for 1 or 2 numbers omitted or misplaced
(b) (i)	5, 7, 11, 13, 17	1FT	
(ii)	8, 10, 14, 16	1FT	
8	$x < 1.25$ oe	3	With no wrong working seen M1 for $2x + 3 > 6x - 2$ M1FT for $3 + 2 > 6x - 2x$ oe M1FT for $x < \frac{b}{a}$ from $ax < b$ oe
9 (a)	65	1	
(b)	115	1FT	FT 180 – <i>their</i> (a)
10 (a)	$3x(4x - 9y)$ final answer	2	B1 for $3(4x^2 - 9xy)$ or $x(12x - 27y)$
(b)	$(a + 2b)(4a - c)$ final answer	2	B1 for $4a(a + 2b) - c(a + 2b)$ or $a(4a - c) + 2b(4a - c)$
11	$\frac{\sqrt{7}}{7}$	1	
12	$\mathbf{p} = \mathbf{a} + \mathbf{b}$ oe $\mathbf{q} = 2\mathbf{a} + \mathbf{b}$ oe $\mathbf{r} = -2\mathbf{a} + \mathbf{b}$ oe	3	B1 for each
13	$a = 2$ $b = 30$	1 1	

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2016	0607	21

Question	Answer	Mark	Part Marks
14	$[a =] \quad 3$ $[b =] -12$	3	<p>M1 for $kx(x - 4)$ M1 for substituting (8, 96) or $b = -4a$ soi</p> <p>OR</p> <p>M1 for $0 = 4^2 a + 4b$ or $b = -4a$ soi M1 for $96 = 8^2 a + 8b$</p> <p>OR</p> <p>M1 for $[y =] a((x - 2)^2 - 4)$ M1 for substituting (8, 96) or $b = -4a$ soi</p> <p>If zero scored, SC1 for $a = 3$, or $b = -12$</p>