Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **May/June 2017**

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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MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

Types of mark

M Method marks, awarded for a valid method applied to the problem.

A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.

B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation '**dep**' is used to indicate that a particular M or B mark is dependent on an earlier mark in the scheme.

Abbreviations

awrt	answers which round to
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
rot	rounded or truncated
SC	Special Case
soi	seen or implied

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Question	Answer	Marks	Part Marks
1	0.36	**1**	
2(a)	$\frac{4}{15}$ cao	**1**	
2(b)	$\frac{9}{11}$ oe	**1**	
3	$x^4 - 4x^2$	**2**	**M1** for either term correct
4	[0].043[0]	**1**	
5	1	**1**	
6	120	**2**	**M1** for $120n$, $n > 1$ or **M1** for 40, 60, 80 and 24, 48, 72 seen or **M1** for $2 \times 2 \times 5$ and $2 \times 2 \times 2 \times 3$ soi
7	3	**2**	**M1** for $x^3 = 27$
8	10	**3**	**M2** for $\sqrt{26^2 - 24^2}$ or **M1** for $x^2 + 24^2 = 26^2$ or identifies 5, 12, 13 triangle
9	$[x =] 1.5$ $[y =] -2$	**3**	**M1** for correct method to eliminate one variable **B1** for $x = 1.5$ **B1** for $y = -2$ If 0 scored **SC1** for correct substitution into one of original equations and correct evaluation to find other variable
10	$3\sqrt{5}$	**2**	**M1** for $\sqrt{6^2 + 3^2}$ or better or **M1** for $a = 5$
11	$[y =] -2x + 17$ oe	**3**	**M2** for $y = -2x + k$ or **M1** for $\frac{11-3}{3-7}$ soi
12	$x = \frac{7}{2}$, -1 oe	**3**	**M2** for $(2x - 7)(x + 1)$ or **M1** for $(2x + a)(x + b)$ where $a + 2b = -5$ or $ab = -7$ or **M1** for $2x(x + 1) - 7(x + 1)$ or $x(2x - 7) + 1(2x - 7)$

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Question	Answer	Marks	Part Marks
13	$6\sqrt{6}+12$ or $6(\sqrt{6}+2)$	**3**	**M2** for $\frac{12(\sqrt{6}+2)}{6-4}$ or better or **M1** for $\frac{\sqrt{6}+2}{\sqrt{6}+2}$ oe seen
14	$\frac{8}{15}$ final answer	**4**	**B3** for $\frac{48}{90}$ oe or **M2** for $\frac{3}{10}\times\frac{2}{9}+\frac{7}{10}\times\frac{6}{9}$ or **M1** for $\frac{3}{10}\times\frac{2}{9}$ or $\frac{7}{10}\times\frac{6}{9}$
15	$8x^2-26xy+15y^2$ final answer	**3**	**M2** for $8x^2-6xy-20xy+15y^2$ or **M1** for 3 terms correct
16	$\log\frac{1}{2}$ or $-\log 2$ final answer	**3**	**M2** for $\log\left(\frac{3^2}{2^3}\times\left(\frac{2}{3}\right)^2\right)$ or better or **M1** for one correct use of log rules.
17	$\cos 60$ $\sin 60$ $\sqrt{2}$ $\tan 60$	**2**	**B1** for 3 in correct 'relative' order

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