Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **October/November 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.

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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.

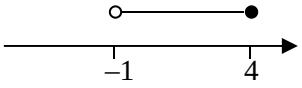
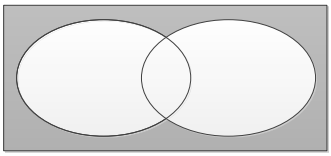
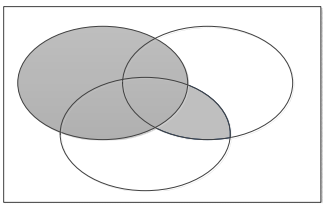
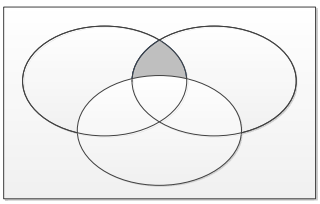
B Mark for a correct result or statement independent of Method marks.

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	Partial Marks
1	$\frac{200 \times 40}{0.005 + 0.003}$ 1 000 000	**3**	**M1** for for 3 correct approximations **A1** for numerator = 8000 or denominator = 0.008
2(a)	$2^3 \times 3^{[1]} \times 7^2$ isw	**1**	
2(b)	$2^4 \times 3^2 \times 7^3$ isw	**1**	
2(c)	$2^2 \times 3^{[1]} \times 7^{[1]}$ isw	**1**	
3		**2**	**B1** for correct interval indicated
4	$\frac{5}{24}$	**2**	**M1**for $\frac{9}{24} - \frac{4}{24}$ oe
5	$x = -5$ $y = -3$	**3**	**M1** for correctly eliminating one variable **B1** for each answer If zero scored **SC1** for correct substitution and evaluation to find the other variable
6(a)	(–1, 8)	**2**	**B1** for each co-ordinate or for $\left(\frac{3-5}{2}, \frac{6+10}{2}\right)$
6(b)	$4\sqrt{5}$	**3**	**M1** for $8^2 + 4^2$ **A1** for $\sqrt{80}$
7	6.23×10^5	**2**	**B1** for figs 623 or 0.63×10^5 soi or 56×10^4 soi
8(a)		**1**	
8(b)		**1**	
8(c)		**1**	
9(a)	110	**2**	**B1** for reflex angle AOD = 220 or AXD = 70

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Question	Answer	Marks	Partial Marks
9(b)	45	**2**	**FT** 155 **–** *their* 110 **B1** for angle *BCD* = *their* 110 + 25
10	3.6	**3**	**M2** for $12 \times \frac{\sqrt{9}}{\sqrt{100}}$ oe or $y = \frac{36}{\sqrt{x}}$ or **M1** for $\frac{y}{\sqrt{9}} = \frac{12}{\sqrt{100}}$ or $y = \frac{k}{\sqrt{x}}$
11(a)	$(x – 5)(x + 2)$	**2**	**B1** for $(x + a)(x + b)$ where $ab = –10$ or $a + b = –3$ or for $x(x – 5) + 2(x – 5)$ or $x(x + 2) – 5(x + 2)$
11(b)	$x < –2$, $x > 5$	**2**	**B1FT** for correct 'inequalities' from (a)
12	$6\sqrt{2} – 4$ or $2(3\sqrt{2} – 2)$ final answer	**3**	**M1** for $\times\frac{3 - \sqrt{2}}{3 - \sqrt{2}}$ **B1** for $(3 + \sqrt{2})(3 – \sqrt{2}) = 7$
13	$6a^2 – 19ab + 15b^2$ final answer	**3**	**B2** for $6a^2 – 9ab – 10ab + 15b^2$ or **B1** for 3 correct terms above

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