



CAMBRIDGE INTERNATIONAL MATHEMATICS

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Paper 2 (Extended)

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MARK SCHEME

Maximum Mark: 40

Published

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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.

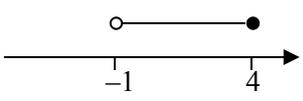
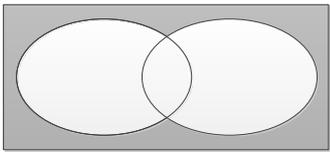
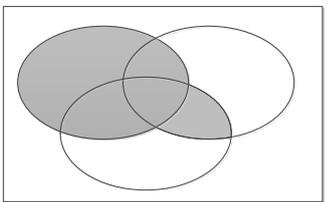
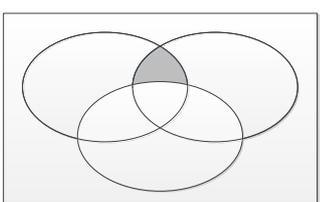
Types of mark

- 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

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 $AXD = 70$

Question	Answer	Marks	Partial Marks
9(b)	45	2	FT 155 – <i>their</i> 110 B1 for angle $BCD = \textit{their}$ 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