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MARK SCHEME
Maximum Mark: 40

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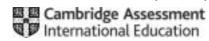
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MARK SCHEME NOTES

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	$\frac{200 \times 40}{0.005 + 0.003}$	3	M1 for for 3 correct approximations A1 for numerator = 8000 or denominator = 0.008
	1 000 000		
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	-1 4	2	B1 for correct interval indicated
4	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 <i>BCD</i> = <i>their</i> 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