



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	Part Marks
1(a)	33	1	
1(b)	29	1	
1(c)	25	1	
1(d)	20	1	
2	0.8	1	
3	$\frac{3}{10}$ cao	2	M1 for $\frac{30}{100}$ oe
4	60 and 90	2	B1 for each or M1 for $150 \div 5$
5	Octagon	1	
6	42	1	
7(a)	85 [vertically] opposite angle[s]	2	B1 for each and no other angle properties
7(b)	80	2	M1 for $360 - (100 + 120 + 60)$ or better
8	correct examples	2	B1 each
9	28 nfw	3	M2 for $4 \times 8 - 2 \times \frac{1}{2} \times 2 \times 2$ oe or M1 for 4×8 or $\frac{1}{2} \times 2 \times 2$
	cm ²	1	
10	3×10^{-8}	1	
11	\$224	3	M2 for $\frac{200 \times 3 \times 4}{100}$ [+200] oe or M1 for $\frac{200 \times 3}{100}$ [$\times 4$] oe (implied by 6)
12(a)	2 (2x + 5) final answer	1	
12(b)	36a – 12b final answer	1	
13	$\frac{3x^2}{5}$	2	M1 for $\frac{18x^2}{30}$ or $\frac{9x^2}{15}$ or $\frac{6x^2}{10}$ If 0 scored, SC1 for answer $\frac{3x^n}{5}$, where n is an integer

Question	Answer	Marks	Part Marks
14	$(8, -1)$	2	B1 for each co-ordinate
15	$\frac{3}{4}$ oe	1	
16	$(3.5, 4)$	2	B1 for each co-ordinate If 0 scored, SC1 for reversed co-ordinates
17	$0 \leq f(x) \leq 36$	2	B1 for 0 seen as minimum value of $f(x)$ If 0 scored, SC1 for $9 \leq f(x) \leq 36$
18	Translation $\begin{pmatrix} -3 \\ 0 \end{pmatrix}$	2	B1 for each
19	Correct image drawn with $(3, 2)$ $(3, -2)$ $(5, 2)$	2	B1 2 of 3 points correct or $y = x$ drawn If 0 scored, SC1 for correct reflection in $y = -x$