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Paper 5 (Core)

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MARK SCHEME

Maximum Mark: 24

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	Mark	Partial Marks																				
1(a)	3.6×4.5 $3.6 + 3.6 + 4.5 + 4.5$ in any order or $2 \times 3.6 + 2 \times 4.5$ or $7.2 + 9$	2	B1 for each																				
1(b)	<table border="1"> <tbody> <tr> <td>4.5</td> <td>3.6</td> <td>16.2</td> <td>16.2</td> </tr> <tr> <td>7</td> <td>2.8</td> <td>19.6</td> <td>19.6</td> </tr> <tr> <td>10</td> <td>2.5</td> <td>25</td> <td>25</td> </tr> <tr> <td>12</td> <td>2.4</td> <td>28.8</td> <td>28.8</td> </tr> <tr> <td>22</td> <td>2.2</td> <td>48.4</td> <td>48.4</td> </tr> </tbody> </table>	4.5	3.6	16.2	16.2	7	2.8	19.6	19.6	10	2.5	25	25	12	2.4	28.8	28.8	22	2.2	48.4	48.4	4	B1 for last two columns equal B1 for 2.5 B1 for 2.4 B1 for 22 C opportunity
4.5	3.6	16.2	16.2																				
7	2.8	19.6	19.6																				
10	2.5	25	25																				
12	2.4	28.8	28.8																				
22	2.2	48.4	48.4																				
1(c)	At least two more 4s in the last column	1	C opportunity																				
1(d)	4 by 4 6 by 3	2	B1 for either B1 for the other without extras If 0 scored, B1 for 1×4 and 2×2 soi																				
2(a)	$[A =] \frac{1}{2} \times 7.2 \times 6.5$ oe $[P =] 7.2 + 6.5 + 9.7$ oe	2	B1 for each																				
2(b)(i)	$2x + 36$	1																					
2(b)(ii)	$10x$	1																					
2(b)(iii)	4.5 [20] 20.5	2	B1 for each B1FT <i>their</i> expressions if answer positive B1FT for $16 + \textit{their} 4.5$ C opportunity																				
2(c)	<table border="1"> <tbody> <tr> <td>6.5</td> <td>7.2</td> <td>9.7</td> <td>23.4</td> <td>23.4</td> </tr> <tr> <td>4.5</td> <td>20</td> <td>20.5</td> <td>45</td> <td>45</td> </tr> <tr> <td>4.8</td> <td>14</td> <td>14.8</td> <td>33.6</td> <td>33.6</td> </tr> <tr> <td>5.6</td> <td>9</td> <td>10.6</td> <td>25.2</td> <td>25.2</td> </tr> </tbody> </table>	6.5	7.2	9.7	23.4	23.4	4.5	20	20.5	45	45	4.8	14	14.8	33.6	33.6	5.6	9	10.6	25.2	25.2	4	B1FT for second row with <i>their</i> perimeter or <i>their</i> area in both cells B1 for third row correct B1 for 10.6 B1 for 25.2 twice C opportunity
6.5	7.2	9.7	23.4	23.4																			
4.5	20	20.5	45	45																			
4.8	14	14.8	33.6	33.6																			
5.6	9	10.6	25.2	25.2																			
2(d)	At least two more 8s in the last column	1	C opportunity																				

Question	Answer	Mark	Partial Marks
2(e)	6, 8, 10 5, 12, 13	3	B2 for one OR B1 for 6, 8 B1 for 5, 12 If 0 scored, B1 for 2×4 and 1×8 soi C opportunity
Communication: seen in three of the following questions		1	
1(b)	any relevant calculation		
1(c)	one cell with correct working shown e.g. 5×0.8		
2(b)(iii)	<i>their</i> $10x = \text{their } (2x + 36)$		
2(c)	$33.6 \div 7$ or $33.6 - 14 - 14.8$ or $\sqrt{14.8^2 - 14^2}$ or $25.2 - 5.6 - 9$ or $\sqrt{5.6^2 + 9^2}$		
2(d)	one cell with correct working shown e.g. 0.4×20		
2(e)	“3, 4, 5” triangle or $\sqrt{6^2 + 8^2}$ or $\sqrt{5^2 + 12^2}$ or $\frac{1}{2} \times 6 \times 8 - 6 - 8$ or $\frac{1}{2} \times 5 \times 12 - 5 - 12$		