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Mark Scheme (Results)

November 2013

Pearson Edexcel GCSE
In Mathematics Modular (2MB01)
Unit 2: (5MB2F_01) Foundation
(Non-Calculator)

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NOTES ON MARKING PRINCIPLES

1 All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.

2 Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.

3 All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.

4 Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.

5 Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

6 Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

i) *ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear*
Comprehension and meaning is clear by using correct notation and labeling conventions.

ii*) select and use a form and style of writing appropriate to purpose and to complex subject matter*
Reasoning, explanation or argument is correct and appropriately structured to convey mathematical reasoning.

iii) *organise information clearly and coherently, using specialist vocabulary when appropriate*.
The mathematical methods and processes used are coherently and clearly organised and the appropriate mathematical vocabulary used.

7 With working

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.

If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.

If there is no answer on the answer line then check the working for an obvious answer.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.

If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

8 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

9 Ignoring subsequent work

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: e.g. incorrect canceling of a fraction that would otherwise be correct

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect e.g. algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

10 Probability

Probability answers must be given a fractions, percentages or decimals. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

11 Linear equations

Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

12 Parts of questions

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

13 Range of answers

Unless otherwise stated, when an answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and includes all numbers within the range (e.g 4, 4.1)

Guidance on the use of codes within this mark scheme
M1 – method mark A1 – accuracy mark B1 – Working mark C1 – communication mark QWC – quality of written communication oe – or equivalent cao – correct answer only ft – follow through sc – special case dep – dependent (on a previous mark or conclusion) indep – independent isw – ignore subsequent working

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		90	1	B1 cao
	(b)		*O* marked correctly	1	B1
	(c)		Correct arrows	1	B1
2			8	2	M1 for 30 ÷ 4 or at least 3 multiples of 4 shown A1 cao SC B1 7 on answer line, no working shown
3	(a)		3 or 5 or 21	1	B1 for 3 or 5 or 21
	(b)		16	1	B1 cao
	(c)		24	1	B1 cao
4	(a)		Squares shaded	1	B1 for any 6 squares shaded
	(b)		$\frac{1}{5}$	2	M1 $\frac{20}{100}$ or equivalent fraction A1 cao
5	(a)		$3p$	1	B1 for $3p$
	(b)		$8t$	1	B1 for $8t$

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
*6			No with working and (£)1.76 or (£)8.19	4	M1 for method to find the total of the two items eg 3.25 + 2.99 (= 6.24) M1 for complete method eg subtract the cost of two items from 8 or add on the cost of a coffee to the two items A1 for (£)1.76 or (£)8.19 C1 (dep on M1) ft for statement shown with correct money notation. OR M1 for subtraction of the cost of an item from 4 or 8 M1 for complete method eg adding the two remainders or subtracting the second value from their running total A1 for (£)1.76 C1 (dep on M1) ft for statement shown with correct money notation.
7	(a)		Warsaw	1	B1 accept –8
	(b)		6	1	B1 accept –6
	(c)		–3	1	B1 cao
8	(a)		40	1	B1 cao
	(b)(i)		55	3	M1 180 – (40 + 25 + 60) or 180 – 125 or 180-40-25-60 A1 cao
	(ii)				B1 (indep) Sum of the angles on a straight line is 180^{o}

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
9	(a)	8×3 + 20	44	2	M1 for 8 × 3 + 20 A1 cao
	(b)		No + reason	2	B2 No + you only pay the £20 once oe OR B1 6×8+20(=68) B1 No + valid comparison
10	(a)		Correct pattern	1	B1
	(b)		12	1	B1 cao
	(c)	20÷2 or Diagram or Table	11	2	M1 for a complete method to find the pattern number from the number of grey tiles A1 cao
11	(a)		0.8 drawn	1	B1 cao
	(b)	$\frac{3}{4}+\frac{3}{4}=1\frac{1}{2}$ 1.500 – 0.8 = 0.7 0.7 × 1000 OR $\frac{3}{4}+\frac{3}{4}=1\frac{1}{2}$ $1\frac{1}{2}$ kg = 1500 g 0.8 kg = 800g 1500 – 800 OR 0.8kg = 800g $\frac{3}{4}$ kg = 750g 800 – 750 = 50 750 – 50	700	4	M1 For a complete method to find the weight of two puddings M1 For a complete method to find the difference of 'weight of two puddings' and 0.8kg M1 For a complete method to convert an appropriate weight from kg to g A1 cao OR M1 For a complete method to find the difference between 0.8 kg and $\frac{3}{4}$ kg M1 For a complete method to find the difference between $\frac{3}{4}$ kg and '0.8-$\frac{3}{4}$', M1 For a complete method to convert an appropriate weight from kg to g A1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
12	(a)		Correct diagram	1	B1
	(b)		Correct diagram	1	B1 cao
*13			Yes with working	4	M1 9.60 ÷3 (=3.20) or 9.60 × 2 (= 19.20) or 9.60 × $\frac{2}{3}$ (=6.40) M1 for a fully correct method to find the cost of the two shirts A1 12.8(0) C1 (dep on M2) ft statement supported by working OR M1 9.60 ÷3 (=3.20) or 9.60 × $\frac{2}{3}$ (=6.40) M1 13 ÷ 2 A1 for 6.4(0) and 6.5(0) C1 (dep on M2) ft statement supported by working
14			290	3	M1 for (180 – 40) ÷ 2 M1 for 360 – '70' A1 cao
15	(a)		$10c + 15d$	1	B1 cao
	(b)	$x + x + 3 + 2x = 4x + 3$ $2(3x – 2) = 6x – 4$ $6x – 4 – (4x + 3)$	$2x – 7$	4	M1 for $x + x + 3 + 2x$ (= $4x + 3$) M1 for $2(3x − 2)$ (= $6x − 4$) M1 for '$6x$' –'$4x$' – '4' ± '3' oe A1 cao OR M1 for $2(3x − 2)$ (= $6x − 4$) M1 for '$6x$'− x– x – $2x$ (=$2x$) oe M1 for '−4' ± 3 A1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
16	(a)		Correct diagram	2	B2 (B1 any isometric face correct)
	(b)		6	2	M1 (1) × 2 × 3 A1 6 OR M1 for 2 × 4 × 6 ÷(2 × 2 × 2) A1 6
17			4500	5	M1 for splitting the shape (or show the recognition of the "absent" rectangle) and using a correct method to find the area of one rectangle M1 for a correct method to find the area of a 2nd rectangle M1 for a complete and correct method to find the total area M1 (dep on at least one prevM1) for a correct method to find 90% of their total area A1 cao

Modifications to the mark scheme for Modified Large Print (MLP) papers.

Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme.

The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5°
Measurements of length: ±5 mm

PAPER:			
Question		**Modification**	**Notes**
Q1		Diagram is size × 2.	Standard mark scheme
Q3		'eight' inserted into 1st line.	Standard mark scheme
Q4		2cm squares.	Standard mark scheme
Q7		Map removed and replaced with a table giving places in alphabetical order	Standard mark scheme
Q9		No picture.	Standard mark scheme
Q10		2cm squares. Shading is dotty. 'grey' changed to 'shaded' throughout.	Standard mark scheme
Q11		Just scale given.	Standard mark scheme
Q13		Just information given with no box.	Standard mark scheme
Q15		MLP only: *x* changed to *y*, arrows removed, information written in.	Standard mark scheme (*x* changed to *y*)

PAPER:			
Question		**Modification**	**Notes**
Q16		Model for part (a) has no dimensions written on it. Models for part (b) – dimensions of $2 \times 4 \times 6$ given. Wording given below	
Q16a		Look at the model or at the diagram for Question 16(a). They show a cuboid. For the cuboid (i) write down the number of faces, (ii) write down the number of edges, (iii) write down the number of vertices. (2 marks)	B2 All answers correct (B1 at least one correct answer given)
Q16b		Look at the two models or at the diagram for Question 16(b). They are NOT accurate. A different box has been made to hold cubes. This box is in the shape of a cuboid. A cube is also shown. Each cube has edges of length 2 cm Work out the largest number of cubes that can fit into the box. (2 marks)	Standard Mark Scheme

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