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Mark Scheme (Results)

November 2013

Pearson Edexcel GCSE
In Mathematics Modular (2MB01)
Unit 1: (5MB1F_01) Foundation
(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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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.

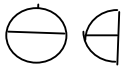
12 Parts of questions

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: 5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		24	1	B1 cao
	(b)		22	2	M1 for 8 + 8 + 6 oe or "24" − 2 A1 cao
	(c)			1	B1 for drawing a circle showing 4 quadrants and a semicircle showing 2 sectors
2	(a)		evens	1	B1 cao
	(b)		unlikely	1	B1 cao
	(c)		1 marked	1	B1 for cross marked at 1
	(d)		colours	1	B1 for 2 or 3 additional counters marked red
*3	(a)		diagram or chart	4	B1 for a key or suitable labels to identify Harry and Shamus B1 for horizontal or vertical axis labelled B1 for at least 3 correct plots C1 for fully correct diagram(s) or charts(s)
	(b)		comparisons	2	B1, B1 ft for any two correct comparisons.

$\frac{1}{4}$

PAPER: 5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
4			7.31	4	M1 for a correct method to work out the total cost (= 16.92) M1 for a correct method to find $\frac{1}{4}$ of their total cost (or $\frac{3}{4}$) M1 (dep on at least M1) for subtraction from £20 A1 cao
5	(a)		2	2	M1 for attempt to order or two middle unordered numbers selected A1 cao
	(b)		4	2	M1 for 5 – 1 or 1 – 5 or 1 to 5 A1 cao
	(c)		18 11 7 3 1	1	B1 cao
	(d)		40	1	B1 for 40 or ft their frequencies
	(e)	18×0 + 11×1 + 7×2 + 3×3 + 1×4 =	38	2	M1 for Σfx A1 cao [SC: no working- B1 for 56]
*6			No	2	M1 for a relevant calculation, eg 60 +30 or 95 ÷ 60 (= 1.58…) or sight of 90 C1 (dep on M1) for correct statement with correct calculations
7	(a)		(A1), A2, A3 B1, B2, B3 C1,C2 C3	2	B2 for a fully correct list (B1 for 5 or 6 more correct. Ignore repeats)
	(b)		$\frac{1}{9}$	1	B1 for $\frac{1}{9}$ oe or ft part (a)

PAPER: 5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
8	(a)		$\frac{1}{4}$	1	B1 for $\frac{1}{4}$ oe
	(b)		$2x°$	1	B1 for $2x°$ oe (condone omission of °)
	(c)		20	2	M1 for $150 \div 360 \times 48$ oe or $48 \div 4 + \frac{2}{3} \times (48 \div 4)$ oe A1 cao
*9			Investment B	4	M1 for $3 \times 12 \times 5$ (= 180) M1 for $2500 \times 3 \times 2.5 \div 100$ (= £187.50) A1 for (£)180 and (£)187.5(0) or (£)2680 and (£)2687.5(0) C1 (dep on M2) for correct conclusion for their figures Alternative method: M1 for $12 \times 5 = 60$ M1 for '60' $\div 2500 \times 100$ A1 for 2.4(%) C1 (dep on M2) for correct conclusion for their figures NB: accept comparable figures for different time periods SC: If compound interest used can score M1 M0 A0 C1 ft

PAPER: 5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
10	(a)	<table><tr><td>4</td><td>15</td><td>11</td><td>30</td></tr><tr><td>12</td><td>5</td><td>10</td><td>27</td></tr><tr><td>16</td><td>20</td><td>21</td><td>57</td></tr></table>	complete 2-way table	3	B3 cao (B2 for 4 or 5 correct entries B1 for 2 or 3 correct entries)
	(b)		5	1	B1 cao
	(c)		19	1	B1 for 19 or ft 4 + "15" or 30 – "11"
11	(a)		question + response boxes	2	B1 for appropriate question with time period B1 for at least 3 boxes that are either non-overlapping but not necessarily exhaustive, or exhaustive but not necessarily non-overlapping NB time period and/or unit of time may appear in either the question or with the response boxes; award a maximum of B1 if no units
	(b)		two correct reasons	2	B2 for 2 correct reasons from, eg only girls, (all about) the same age, same year group, same school (B1 for 1 correct reason)
12	(a)		$0.75 - x$	2	M1 for $1 - 0.25 + x$ or $0.25 + x$ A1 or $0.75 - x$ oe
	(b)		60	2	M1 for 0.25×240 oe A1 cao

PAPER: 5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
13	(a)		Positive correlation	1	B1 for positive correlation or the greater the rainfall the more umbrellas sold oe
	(b)		52 – 58	2	M1 for a single straight line segment with positive gradient that could be used as a line of best fit or an indication on the diagram from 28 on the *x*-axis A1 for an answer in the range of 52 – 58
*14		2 × 462 + 251 = 1175 0.95×1175 = 1116.25 2 × 485 + 218 = 1188 1188 – 75 = 1113.00	Jetstream	5	M1for identifying correct costs for either Highway Airlines or Jetstream Airlines M1 for attempt to calculate the costs for the family eg 2× "462" "251" or 2 × "485" + "218" M1 for a correct method to work out the discount for one company eg 0.95 × "1175" or 0.05 × "1175" or "1188" – 75 A1 for (£)1116.25 and (£)1113.00 C1 (dep on M1) for calculations clearly identified with each airline and correct decision from their figures

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: ±5º
Measurements of length: ±5 mm

PAPER:			
Question		**Modification**	**Notes**
Q1		Circles are 2.5cm diameter. Key at top of pictogram.	Standard mark scheme
Q2	(c)	Probability scale is 16cm long.	Standard mark scheme
Q3		Grid is 2cm squares.	Standard mark scheme
Q4		No pictures just information given.	Standard mark scheme
Q10		Braille table has (i) to (vi) in spaces. 4 (i) (vi) (ii) (iv) 5 (v) 27 (iii) 2 21 57	Standard mark scheme
Q13		*x* axis 2cm for 5. *y* axis 2cm for 10. *x* changed to filled in circles. Right axis labelled.	Standard mark scheme
	(b)	Rainfall changed from 28mm to 30mm.	Standard mark scheme
Q14		On both tables top 2 rows and bottom 2 rows removed.	Standard mark scheme

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