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Mark Scheme (Results)

Summer 2015

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Foundation (Calculator) Unit 1

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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.

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. Note that in some cases a correct answer alone will not score marks unless supported by working; these situations are made clear in the mark scheme. Examiners should 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 award marks for the quality of written communication (QWC).
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 labelling 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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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.
Partial answers shown (usually indicated in the ms by brackets) can be awarded the method mark associated with it (implied).
Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks; transcription errors may also gain some credit. Send any such responses to review for the Team Leader to consider.
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 cancelling 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.

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 (embedded answers).

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)

14 The detailed notes in the mark scheme, and in practice/training material for examiners, should be taken as precedents over the above notes.

Guidance on the use of codes within this mark scheme
M1 – method mark for appropriate method in the context of the question 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

5MB1F/01 June 2015					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		Saplom	1	B1 cao
	(b)		Yellow	1	B1 cao
	(c)		35.20	1	B1 cao
2	(a)	6, 2 8, 4	Frequency table	2	M1 for 3 tallies or frequencies correct A1 for all frequencies correct
	(b)		Correct chart	3	M1 Bar Chart (or stick graph) with at least 3 bars (sticks) A1 ft their frequencies for 4 bars (sticks) correct heights (ft) A1 fully labelled **Or** M1 Pictogram or pie chart with at least 3 rows showing A1 ft their frequencies for 4 rows or sectors correct (ft) A1 labels and key
	(c)		Clover	1	B1 ft table or chart
3	(a)		× at 0.5	1	B1 cao
	(b)		× at 0	1	B1 cao
	(c)		Unlikely	1	B1 cao
4	(a)		35	1	B1 33 – 37
	(b)		Marked	1	B1 at 6.4 cm from P

5MB1F/01 June 2015				
Question	**Working**	**Answer**	**Mark**	**Notes**
5		Yes with reasons	4	M1 for complete method to calculate the total number of lengths swum in one week (150) or the distance swum in one session (30 × 25 or 60 × 25) or the number of lengths swum on 4 of the same days e.g. 4 × 30 or 4 × 60 M1 for complete method to calculate the total distance swum in 4 weeks (15 0000 **or** complete method to calculate swimming distance and swimming plan lengths for one week oe A1 for 15 000 m or 15 km **or** 600 and 560 **or** 3.75 km and 3.5 km C1 for Yes (dep on M1) with 15 km given for the total distance swum **or** given for the 560 lengths in 14 km and 600 lengths swum **or** for the correct distance swum in one week 3.75 km and the 3.5 km swimming plan
6 (a)		30	1	B1 cao
(b)		15	1	B1 cao
(c)		4 'jars' in Week 4	1	B1 cao
(d)		5	1	B1 cao
7 (a)		Sleep	1	B1cao
(b)		1/4	1	B1 oe
(c)		3	2	M1 for a complete method e.g. 360 ÷ 45 and 24 ÷ '8' or 24 ÷ 8 or 24 ÷ 4 ÷ 2 or 24 ÷ 360 × 45 A1 cao

<table>
<tr><th colspan="5">5MB1F/01 June 2015</th></tr>
<tr><th>Question</th><th>Working</th><th>Answer</th><th>Mark</th><th>Notes</th></tr>
<tr><td>8 (a)</td><td>7 8 8 8 9 9 10 13 14</td><td>9</td><td>2</td><td>M1 Put in ascending or descending order or select middle value (7) from unordered list
A1 9 cao</td></tr>
<tr><td>(b)</td><td>Girls’ median is 9
Boys' mean is 9.5(55…)
Girls' mean is 10
Boys’ range is 7
Girls’ range is 8</td><td>Comparison</td><td>4</td><td>B1 Girls' median is 9 or (boys' mean = 9.5(55…) and girls' mean = 10)
Also allow comparison of minimum or maximum values
B1 Girls' range = 8 and boys' range = 7
C1 Comparison of medians (ft) or means
C1 Comparison of ranges (ft).
At least one comparison must be in context for the award of both C marks</td></tr>
<tr><td>9</td><td><table><tr><th></th><th>A</th><th>D</th><th>M</th><th>T</th></tr><tr><td>G</td><td>8</td><td>9</td><td>13</td><td>30</td></tr><tr><td>B</td><td>0</td><td>9</td><td>2</td><td>11</td></tr><tr><td>T</td><td>8</td><td>18</td><td>15</td><td>41</td></tr></table></td><td>Correct Table</td><td>3</td><td>B3 for fully correct table

(B2 for at least 7 of their entries correct)

(B1 for at least 4 of their entries correct)</td></tr>
</table>

5MB1F/01 June 2015				
Question	**Working**	**Answer**	**Mark**	**Notes**
10 (a)		$\frac{9}{20}$	2	M1 for $\frac{n}{9+11}$ where $1 \leq n < 20$ **or** $\frac{9}{m}$ where $9 < m < 20$ A1 $\frac{9}{20}$ oe
(b)		3	3	M1 $\frac{2}{5} \times (10+20)$ (=12) M1 "12" - 9 A1 cao or M1 $\frac{2}{5} = \frac{2 \times "6"}{10+20} \left(= \frac{12}{30}\right)$ M1 '12' - 9 A1cao
11 (a)		10:55	2	M1 for one time calculation correct e.g. 12 45 or "12 45" – 1 hr 50 min A1 accept in any form
(b)		32.35	3	M1 $109 \times \frac{15}{100} (= 16.35)$ or 0.85 oe M1 (dep) 109 – "16.35" or $109 \times \frac{85}{100}$ or 125 – "92.65" A1 cao

5MB1F/01 June 2015				
Question	**Working**	**Answer**	**Mark**	**Notes**
12 (a)		Description	1	B1 description eg Taller trees are older. Accept positive correlation
(b)		20	1	B1 19 – 21
(c)		2	2	M1 for evidence of taking readings at two points from Sandy line, or increase excluding start e.g. 24 ÷ 10 or 14 ÷ 5 A1 for answer 1.8 to 2.2
13 (a)		$1 - x$	1	B1 cao
(b)		$200(1 - x)$	2	M1 for $200 \times$ "$(1 - x)$" A1 ft e.g. $200(1 - x)$ or $200 - 200x$
14 (a)		3:1	2	M1 for 48 : 16 or 24 : 8 or 12 : 4 or 6 : 2 or 1 : 3 A1 cao
(b)		3:2	2	M1 for 48×2 (= 96) or 16×4 (=64) or answer given as 2 : 3 oe A1 for 3 : 2 oe or M1 for "3" × 2 or 6 stated and "1" × 4 or 4 stated or answer given as 2 : 3 oe A1 for 3 : 2 oe
15 (a)		Reason	1	B1 e.g. people coming from the market are more likely to have used it.
(b)		Reason	1	B1 e.g. it's a leading question, "cheap" is not defined etc.
(c)		Question with response boxes	2	B1 for a suitable question e.g. How far have you travelled to get to the market? B1 for a set of at least 3 exhaustive, non-overlapping boxes with units, with no inequality symbols.

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: 5MB1F_01			
Question		**Modification**	**Notes**
Q1	(a)	Remove rows Hilperton – Pink and SGW – Black from the table.	B1 cao
Q1	(b)	Remove rows Hilperton – Pink and SGW – Black from the table.	B1 cao
Q1	(c)	Remove rows Hilperton – Pink and SGW – Black from the table.	B1 cao
Q2	(b)	The grid has been enlarged.	M1 Bar Chart (or stick graph) with at least 3 bars (sticks) A1 ft their frequencies for 4 bars (sticks) correct heights (ft) A1 fully labelled **Or** M1 Pictogram or pie chart with at least 3 rows showing A1 ft their frequencies for 4 rows or sectors correct (ft) A1 labels and key
Q3	(a)	Probability scale enlarged.	B1 cao
Q3	(b)	Probability scale enlarged.	B1 cao

PAPER: 5MB1F_01			
Question		**Modification**	**Notes**
Q4	(a)	x angle to measure 50°. Angle arms lengthened. 6.4cm changed to 6.5cm. Length of line increased to 11cm.	B1 33 – 37
Q4	(b)	Jar symbol changed to a circle.	B1 at 6.4 cm from P
Q7	(a)	The diagram has been enlarged.	B1cao
Q7	(b)	The diagram has been enlarged.	B1 oe
Q7	(c)	The diagram has been enlarged.	M1 for a complete method e.g. 360 ÷ 45 and 24 ÷ '8' or 24 ÷ 8 or 24 ÷ 4 ÷ 2 or 24 ÷ 360 × 45 A1 cao
Q8	(a)	Results for Boys and Girls have been moved to the Diagram Book.	M1 Put in ascending or descending order **or** select middle value (7) from unordered list A1 9 cao
Q8	(b)	Results for Boys and Girls have been moved to the Diagram Book.	B1 Girls' median is 9 **or** (boys' mean = 9.5(55…) **and** girls' mean = 10) Also allow comparison of minimum or maximum values B1 Girls' range = 8 and boys' range = 7 C1 Comparison of medians (ft) or means C1 Comparison of ranges (ft). At least one comparison must be in context for the award of both C marks

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