

# Mark Scheme (Results)

Summer 2016

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

**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)		Evens	1	B1 cao
	(b)		Impossible	1	B1 cao
	(c)		X marked	1	B1 for X marked at $\frac{1}{4}$
2	(a)		11	1	B1 cao
	(b)		49	2	M1 for $10 + 16 + \text{“11”} + 12$ or ft “11” from (a) or for $11 \times 4 + 2 + 3$ A1 cao
3			1 lemon 3 orange	2	B2 for 1 lemon and 3 orange labelled (B1 for labels for $P(\text{Orange}) > P(\text{Lemon})$ )
4			21 58	2	M1 for a method using a relevant time calculation, eg $22\ 15 - 8$ mins or $22\ 05 + 8$ mins A1 for 21 58 oe
5	*(a)		Diagram or chart	4	B1 for key or suitable labels to identify Paris and Nice B1 for diagram(s) or chart(s) set up for comparison showing data for at least three days, eg dual bar chart, composite bar chart B1 for correct heights for Paris or Nice C1 for fully correct diagram or chart with axes correctly scaled and labelled
	(b)		Statement	1	C1 for statement of comparison

PAPER: 5MB1F/01					
Question		Working	Answer	Mark	Notes
6	(a)		5, 1, 4, 8	2	M1 for at least 2 correct frequencies or 2 correct tallies A1 for all frequencies correct (ignore tally column)
	(b)		dog	1	B1 ft from frequency column or from tally if different to frequency. Accept 8
7			4.77 m 477 cm	4	M1 for intention to subtract the 3 lengths from 10 m M1 for $1000 - (41 + 112 + 370)$ oe or $10 - (0.41 + 1.12 + 3.7)$ oe A1 for 4.77 or 477 oe B1 for correct units with final answer
8		VM, VC, VS MC, MS, CS	6 correct combinations	2	M1 for at least 4 correct combinations A1 all 6 correct with no incorrect combinations and no repeats
9.	(a)		3	1	B1 cao
	(b)		Home Style	1	B1 cao
	(c)		Sure Stitch, Compact, Classic	2	M1 for $3700 \div 16$ or for any price $\times 16$ A1 Sure Stitch, Compact, Classic
10	(a)		8000	1	B1 (accept 8 thousand or 8)
	(b)		4000	1	B1 cao

PAPER: 5MB1F/01					
Question		Working	Answer	Mark	Notes
11	(a)		46	1	B1 cao
	(b)		35.5	2	M1 for identifying 35 and 36 or for 5 and 6 or for 5.5 A1 for 35.5
	(c)		5	1	B1 cao
12	(a)		$\frac{1}{4}$	1	B1 for $\frac{1}{4}$ oe, eg $\frac{90}{360}$
	(b)		19	3	M1 for method to find the angle for 15 years (= 95), if measured accept 93 – 97 M1 for correct method to find degrees per person $115 \div 23 (= 5)$ or people per degree $23 \div 115 (= \frac{1}{5})$ A1 cao
13			68 (supported)	4	M1 for $20 \times 8.25 + 6 \times 3 (= 183)$ M1 for $20 \times 5.50 + 2 \times 2.50 (= 115)$ M1 (dep on at least M1) for finding the difference between their two totals A1 cao  OR  M1 for $8.25 - 5.50 (= 2.75)$ M1 for $6 \times 3 - 2 \times 2.50 (= 13)$ M1 (dep on at least M1) for finding the total saving for their differences A1 cao

PAPER: 5MB1F/01								
Question		Working				Answer	Mark	Notes
14	(a)					Point plotted	1	B1 for point plotted at (8.5, 35)
	(b)					Positive	1	B1 for positive
	(c)					40 - 50	2	M1 for suitable line of best fit drawn or evidence of vertical line at 10 or a point indicated at (10, y) where $40 \leq y \leq 50$ A1 for 40 - 50
15				F	B	D		Completed table 3 B3 for fully correct table (B2 for 4 or 5 correct entries) (B1 for 2 or 3 correct entries)
			T	8	11	25	44	
			C	12	17	7	36	
				20	28	32	80	
16							$\frac{x+10+x+x-4}{3}$	3 M1 for $x + 10$ or $x - 4$ M1 for $x + 10 + x + x - 4$ A1 for $\frac{x+10+x+x-4}{3}$ oe
17							1746	3 M1 for $1 - 0.03 (= 0.97)$ or for $0.03 \times 1800 (= 54)$ M1 for “0.97” $\times 1800$ or for $1800 - “54”$ A1 cao
*18							School £8930 Hospital £13 395	5 M1 for $23.5 \times 1000 (= 23\,500)$ or for $\frac{1}{20} \times 1000 (= 50)$ oe M1 for “23 500” $\times \frac{19}{20}$ (= 22 325) oe or for $(1000 - 50) \times 23.50 (= 22\,325)$ oe M1 for “22 325” $\div 5 (= 4465)$ M1 for “4465” $\times 2$ or “4465” $\times 3$ C1 for £8930 for school and £13 395 for hospital

## 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:  $\pm 5^\circ$

Measurements of length:  $\pm 5$  mm

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PAPER: 5MB1F_01		
Question	Modification	Notes
Q1	Diagram enlarged. Wording added 'It shows a probability scale'. Diagram enlarged. Wording removed 'with a cross (x)'.	Standard mark
Q2	Wording added 'It shows a pictogram'. Diagram enlarged.	Standard mark

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<b>Question</b>		<b>Modification</b>	<b>Notes</b>
Q3		Diagram removed. Wording changed 'There are 6 sweets in a bag. The flavour of each sweet is either orange or lemon. The flavour of two of the sweets is shown below.' Wording added 'Orange' and 'Lemon'. Jane is going to take at random one on the sweets from the bag. She is twice as likely to take an orange sweet as a lemon sweet. Write a suitable flavour for the remaining sweets. Wording added 'The first two are repeated for you' and 'There are four spaces to fill'. Wording added 'Orange' and 'Lemon' put below the question with four short answer lines underneath.	Standard mark
Q 4		2155 column removed from table.	Standard mark
Q5		Table turned to vertical format.  Wording added 'It shows a grid'. Grid enlarged: 12 squares across and 21 squares up.	Standard mark
Q6	(a)	Wording added 'It shows a frequency table'. Wording added 'using the information in the diagram book' after 'frequency table'. Wording added 'there are eight spaces to fill' below 'Complete the...'	Standard mark
Q8		Box removed.	Standard mark

PAPER: 5MB1F_01														
Question	Modification	Notes												
Q9	'Number of different stitches' column removed from table.	Standard mark												
Q10	Grid enlarged. Diamonds changed to solid circles.	Standard mark												
Q11	Base line added to stem and leaf diagram.	Standard mark												
Q12	Diagram enlarged.	Standard mark												
Q13	Information stacked in vertical format and put into tables.	Standard mark												
Q14	Wording added 'It shows a scatter graph'. Diagram enlarged. Crosses changed to solid circles.	Standard mark												
Q15	Wording added 'There are six spaces to fill'. <b>Braille only:</b> roman numerals (i) to (vi) put in spaces on the table.  <div style="text-align: center;"> <table border="0"> <tr> <td>8</td> <td>(i)</td> <td>25</td> <td>44</td> </tr> <tr> <td>(v)</td> <td>17</td> <td>(ii)</td> <td>(iii)</td> </tr> <tr> <td>(vi)</td> <td>(iv)</td> <td>32</td> <td>80</td> </tr> </table> </div>	8	(i)	25	44	(v)	17	(ii)	(iii)	(vi)	(iv)	32	80	Standard mark
8	(i)	25	44											
(v)	17	(ii)	(iii)											
(vi)	(iv)	32	80											



