

Mark Scheme (Results)

November 2014

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

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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.

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

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

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Question		Working	Answer	Mark	Notes
1	(a)		Ordered	1	B1 for 399, 3007, 3333, 4011, 4435
	(b)		Ordered	1	B1 for 0.7, 3.7, 5.62, 14.3
	(c)		0.9	1	B1 cao
	(d)		$1\frac{3}{8}$	1	B1 cao
2	(a)		Sketch	1	B1 cao
	(b)		Chord	1	B1 cao
	(c)		Cylinder	1	B1 cao
3	(a)		5	1	B1 cao
	(b)		Line drawn	1	B1 for line of symmetry drawn
4			28	3	M1 for $38 + 55 + 41 (= 134)$ or $54 + 43 + 65 (= 162)$ M1 for “162” – “134” A1 cao OR M1 for $54 - 38 (= 16)$ or $55 - 43 (= 12)$ or $65 - 41 (= 24)$ M1 for “16” – “12” + “24” A1 cao

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Question		Working	Answer	Mark	Notes
5	(a)		square, rectangle	1	B1 cao
	(b)		square, rhombus	1	B1 cao
6	(i)		obtuse	2	B1 cao
	(ii)		125		B1 accept 123 - 127
7			11.30	4	B1 for including 4×5 min (= 20 min) M1 for using 40 min, 1h 10 min, 1h, 30 min and 50 min M1 for adding at least 4 correct times or subtracting at least 4 correct times from 4 pm A1 for 11.30 (am) oe
8	(a)		Diagram drawn	1	B1 appropriate diagram drawn
	(b)		71	2	M1 for generating a series beyond 4th term, adding on 7s, adding to diagrams, etc. or any other equivalent method A1 cao
9	(a)		$4d$	1	B1 cao
	(b)		$3ef$	1	B1 cao
	(c)		$5x + 2y$	2	M1 for $5x$ or $2y$ A1 cao

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Question		Working	Answer	Mark	Notes
10			100	4	M1 identifying the triangle as isosceles or gives other base angle as 50° M1 for $180 - 50 - 50 (= 80)$ M1 for $360 - 90 - 90 - "80"$ A1 cao
11			195	2	M1 for 300×0.65 oe A1 cao
12	(a)		35 – 35.5	1	B1 for answer in range 35 – 35.5
	(b)		6.5 – 7.0	1	B1 for answer in range 6.5 – 7.0
	*(c)		No	4	M1 for adding the four weights (= 1280) M1 for a correct method to convert using graph or other means A1 for 2810 – 2825 for converted weight C1 ft (dep on M1) for a correct conclusion for their converted total weight OR M1 for a correct method to convert each weight using graph or other means [792, 660, 616, 748] M1 for adding converted weights A1 for 2810 – 2825 for converted weight C1 ft (dep on M1) for a correct conclusion for their converted total weight OR M1 for adding the four weights (= 1280) M1 for a correct method to convert 2800 pounds to kg using graph or other means A1 for 1270 – 1275 C1 ft (dep on M1) for a correct conclusion for their converted maximum weight NB: answers from (a) or (b) could be used in part (c)

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Question	Working	Answer	Mark	Notes
*13		Cheaper by tram	4	M1 for $3.40 \times 4 (= 14.00)$ M1 for $2.20 + 1.20 \times 10 (= 14.20)$ A1 for (£)14 and (£)14.20 C1 (dep on at least M1) for correct conclusion based on their calculations OR M1 for $2.20 + 1.20 \times 10 (= 14.20)$ M1 for " $14.20 \div 4$ " A1 for (£)3.50 and (£)3.55 C1 (dep on at least M1) for correct conclusion based on their calculations
14		$\frac{8}{9}$	2	M1 for using a suitable common denominator with at least one of two fractions correct A1 for $\frac{8}{9}$ or equivalent fraction
15		108	5	M1 for a method for finding the dimensions e.g. length + width = 12 or $2 \times \text{length} + \text{width} = 21$ A1 for length = 9 (could be shown on diagram) A1 for width = 3 (could be shown on diagram) M1 for area = " $9 \times 3 \times 4$ " A1 cao

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Question		Working	Answer	Mark	Notes
16	(i)		candles 3 holders 5	5	M1 for listing multiples of either 30 or 18 (at least 3 but condone errors if intention is clear) M1 for listing multiples of both 30 and 18 (at least 3 but condone errors if intention is clear) M1 (dep on M1) for division by 30 or 18 or counts up multiples (implied if one answer is correct or answers are reversed) A1 candles (packs) 3, holders (packs) 5 or any same multiple of 3,5 OR M1 expansion of either number in factors M1 demonstrates one of the expansions that includes 6 oe M1 demonstrates second expansion that includes 6 oe A1 candles (packs) 3, holders (packs) 5 or any same multiple of 3,5
	(ii)		90		B1 for 90 or ft on both their packs or ft "common multiple" NB: accept consistent multiples of the given answer
*17			NO figures and comparisons	5	M1 for $100 \times 40 \times 60 (= 240\ 000)$ M1 for " $240000 \div 8000 (= 30)$ " M1 for " $30 \times 2.50 (= 75)$ " A1 for 240 000 and 75 C1 (dep on M1) for comparing the cost of grit with £70 ft their working OR M1 for $70 \div 2.50 (= 28)$ M1 for " $28 \times 8000 (= 224\ 000)$ " M1 for $100 \times 40 \times 60 (= 240\ 000)$ A1 for 240 000 and 224 000 C1 (dep on M1) for comparing values of grit needed with that which can be bought for £70 ft their working

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: ± 5 mm

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Question		Modification	Notes
2	(a)	6 cm base line given	
	(c)	Model given – MLP also have diagram	
3		Pentagon size x 3	
6		Angle arms 10 cm – angle kept at 125°	(ii) B1 accept 120 - 130
8		Patterns set out vertically For pattern number 4 – pattern number 3 is repeated and candidates are asked to complete.	
9	(c)	x changed to w	M1 for $5w$ or $2y$ A1 for $5w + 2y$
10		Insert ‘Two angles are marked as 50° and x° ’	

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Question	Modification	Notes
12	2 cm grid – right axis labelled	
	(a) 16 kg changed to 15 kg	B1 for answer in range 32.5 – 33.5
	(b) 15 pounds changed to 22.5 pounds	B1 for answer in range 10 – 11
16	No picture	
17	Model given – MLP also have diagram Wording inserted 'The box is 100 cm long, 40 cm wide and 60 cm high'	

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