Mark Scheme (Results)

Summer 2014

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Unit 2: 5MB2F_01 (Foundation)

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

Guidance on the use of codes within this mark scheme
M1 – method mark for correct method 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)		Right angled triangle	1	B1 right angled triangle drawn
	(b)		rectangle area 12 cm^2	2	M1 for a rectangle drawn of any dimension, or a shape of area 12cm^2 A1 rectangle of area 12 cm^2
2	(a)		diagram	1	B1diagram for pattern number 4
	(b)		9, 11	1	B1 could ft their diagram
	(c)		31	1	B1 could ft their table
	(d)		explanation	1	B1 explanation eg “adding on 2”, 2n+1 as a rule
3	(a)		acute	1	B1 for acute
	(b)		line of symmetry drawn	1	B1 for single line of symmetry drawn
	(c)		80	1	B1 cao
4			19	2	M1 for counting up on the diagram (eg shown by marks or arrows) OR 35-16 or 16+19 A1 cao

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
5			4	3	M1 for 450÷30 (=15) or adding up at least ten 30s M1 for 50 ÷ "15" or 3.3 (or better) or 3 with remainder 5 A1 cao If no marks awarded then SC B1 for 50 ÷ 30 (= 1500)
6	(a)		09 23	1	B1 (condone missing 0)
	(b)		35	1	B1 cao
	(c)		07 56 08 17 09 57	3	M1 for attempts to add 13 to 07 43 (= 07 56 oe) M1 for attempts to add 5 mins to either 08 12 or 09 52 (= 08 17 or 09 57 oe) A1 cao

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
7	(a)		Twenty thousand and four hundred	1	B1 cao
	(b)		–21	1	B1 cao
	(c)		27	1	B1 cao
	(d)		16	1	B1 cao
	(e)		5	1	B1 cao
	(f)		1:3	1	B1 cao

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
8	(a)		7	3	M1 for £13.50 ÷50p oe or 1350÷50 oe or adding up (at least 16) 50ps working towards £13.50 M1 for "27" − 20 A1 cao or M1 for 20 ×50 (= 1000) and 1350 – "1000" (=350) oe or 20 ×0.50 (= 10.00) and 13.50 – "10.00" (=3.50) oe M1 for "350" ÷50 or "3.50" ÷0.50 A1 cao
	*(b)		No eg only15p left	4	M1 for £1+£1+3×20p (=£2.60) oe M1 for 3×65p+50p (=£2.45) oe or "£2.60"–3×65p–50p oe A1 for 2.6(0) and 2.45 or 2.6(0) and 15p C1 (dep on M1) for a statement which includes "no" (oe) and a reference to figures such as 15p<50p, needs extra 35p etc. with figures shown using correct money notation and units.

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
9	(a)		25	1	B1 cao
	(b)		56	1	B1 cao
	*(c)		Yes 200>180 oe	4	M1 for converting using figures from the graph or for 5 miles = 8 km oe M1 for correct method to convert 240 km into miles (=150 miles) or to convert 350 miles into km (= 560 km) or to convert 180 miles into km (= 288 km) M1 (dep on M2) for correct method for comparison eg 180 miles with 350 − 150 (= 200) miles eg 288 km with 560 − 240 (= 320) km C1 for a correct statement that she will have to stop oe with appropriate supporting evidence eg Yes and 200 miles is to far eg Yes and 330 < 350 eg Yes and 20 miles under" oe eg Yes and 320 > 288
10	(a)		$3a$	1	B1
	(b)		$12y$	1	B1
	(c)		$5e + 3f$	2	M1 (implied) for $5e$ or $3f$ A1 oe

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
11	(a)		40	1	B1 cao
	(b)		18000 - 22000	2	M1 simplification of one number eg 110, 100, 180, 190, 200 A1 answer in the range 18000 – 22000 excluding 20905
12	(a)		x^6	1	B1 cao
	(b)		y^2	1	B1 cao
13			50	4	M1 for 120 ÷ 3 (=40) or 120 ÷ 4 (=30) oe B1 for 30 and 40 M1 for 120 – (40 + 30) A1 cao or M1 for $\frac{1}{3}+\frac{1}{4}$ oe B1 for $\frac{7}{12}$ oe M1 for $1-\frac{7}{12}$ A1 cao

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
14			500	4	M1 for a correct method to convert cm to m or m to cm or cm^3 to m^3 or m^3 to cm^3 (can be implied eg 4 packets drawn in container height) M1 for correct method for one volume or correct method to get at least 2 multipliers from packet to container (can be implied on the diagram) M1 for complete correct method (ignore incorrect conversions) A1 cao

Paper: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
*15			80	4	B1 for $EBF = 50$ or $ABE = 50$ M1 for angles given that can lead to $x = 80$ as the next step eg $EBF = 50$ and $ABE = 50$ eg $EBF = 50$ and $BFG = 100$ eg $EBF = 50$ and $BFE = 80$ eg $EBF = 50$ and $DEB = 130$ and $ABE = 50$ A1 cao C1 for stating correct reasons appropriate to their method shown eg Base angles of an isosceles triangle are equal. with Angles in a triangle add up to 180^o with Alternate angles are equal eg Base angles of an isosceles triangle are equal. with Alternate angles are equal with Angles on a straight line add up to 180^o eg Base angles of an isosceles triangle are equal. with The exterior angle of a triangle is equal to the sum of the opposite interior angles. with Allied angles / Co-interior angles add up to 180^o

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: 5MB2F_01			
Question		**Modification**	**Notes**
Q01		On the centimetre grid replaced by "on the grid"	
	(a)	2 cm grid	
	(b)	2 cm grid. Wording inserted "each square represents a one centimetre square"	
Q02		Diagram set out vertically. Pattern number 4 started. Candidate asked to complete Pattern number 4	
Q03	(b)	Shape of the triangle changed so that it is more obviously isosceles	
Q06		0627 column removed (first column)	
Q09		2cm grid. Label right axis	
Q10	(a)	a changed to t	

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