

Mark Scheme (Results)

November 2015

Pearson Edexcel GCSE  
In Mathematics A (1MA0)  
Foundation (Calculator) Paper 2F

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

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

<b>Guidance on the use of codes within this mark scheme</b>
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



**PAPER: 1MA0\_2F**

Question		Working	Answer	Mark	Notes
1	(i)		Cylinder	1	B1 cao
	(ii)		Cuboid	1	B1 cao
2	(a)		2 hours 20 minutes	2	M1 for a full method to find the difference between the two times or 2.2 hours A1 2 hours and 20 minutes or 140 minutes
	* (b)		No with supporting calculations	3	M1 for adding 18 and 24 to 20 50 A1 21 32 C1 (dep M1) correct conclusion from the comparison of their figure with 21 30 Or M1 for subtracting 18 and 24 from 21 30 A1 20 48 C1 (dep M1) correct conclusion from the comparison of their figure with 20 50 Or M1 for finding the time differences A1 for 40 minutes and 42 minutes C1 (dep M1) correct conclusion from the comparison of their time durations

PAPER: 1MA0_2F					
Question		Working	Answer	Mark	Notes
3	(a)		£1.11 and £2.68	3	B1 for (£)1.11 or 111(p) B1 for (£)2.68 or 268(p) or ft from “£1.11” B1 for correct units
	(b)		No (from correct calculations)	3	M1 for finding the value of the coins M1 for a complete method to find the total value of the voucher and coins A1 correct conclusion from correct calculations, eg No, she only has £5.30 Or M1 for finding the difference between the price of the book and the voucher or the price of the book and the coins M1 for a complete method to find the difference between the book and the voucher AND the coins A1 correct conclusion from correct calculations, eg No, she is 20p short
4	(a)		32 9	2	B1 cao B1 cao
	(b)		$+7$ or $\times \frac{10}{3}$	1	B1 for $+7$ or $\times \frac{10}{3}$
5	(a)		5	1	B1 cao
	(b)		2.8	1	B1 oe
	(c)		1.5	2	M1 for the intention to subtract 3 from both sides or divide each term by 4 as a first step A1 1.5 oe



PAPER: 1MA0_2F				
Question	Working	Answer	Mark	Notes
*6		Diagram or chart drawn	4	M1 for key or suitable labels to identify Tyler and Fletcher M1 for 4 correct month labels OR a linear scale M1 for diagram or chart (combined or separate) set up for comparison, correctly showing data for at least three months C1 for fully correct diagram or chart to include all axes correctly scaled and labelled
7	(a)	Diagram	1	B1 cao
	(b)	15	2	M1 sequence written out and continued or diagram drawn or $2n+1$ given as the $n$ th term A1 cao
	(c)	Explanation	1	B1 explanation eg answer must be odd or use of $2n + 1$ or pattern 17 has 35 circles
8	(a)	$\frac{3}{7}$	1	B1 cao
	(b)	2 squares shaded	1	B1 cao
	(c)	150	2	M1 $200 \div 4 \times 3$ or $0.75 \times 200$ oe A1 cao
	*(d)	Explanation	2	C2 for a full explanation, eg answer given as $\frac{4}{35}$ or “He subtracted $\frac{3}{5}$ from a fraction less than 1 so the answer must be less than 1” (C1 for a partial explanation, eg use of a suitable common denominator or “ He should have used a common denominator”)

PAPER: 1MA0_2F				
Question	Working	Answer	Mark	Notes
9	(a)	Plus Power	1	B1 cao
	(b)	TMF Energy	1	B1 cao
	(c)	2.9	2	M1 for 11.1 – 8.2 or 8.2 – 11.1 or 8.2 to 11.1 A1 cao
10	(a)	-11	2	M1 for $-5 + 12 - 18$ oe A1cao
	(b)	24	2	M1 for a method to find the difference eg $18 - -6$ or $18 + 6$ or use of a number line A1 for 24 accept -24
11		14	2	M1 for $10 - 6$ and “4” + 10 or for $10 - 6$ and “4” $\times$ 2 + 6 A1 for 14 or 10 adults and 4 children
12	(a)	4	1	B1 cao
	(b)	3	2	M1 for listing the numbers in order or an answer of 5 A1 cao
	(c)	2	2	M1 for adding the numbers and dividing by 11 A1 cao

PAPER: 1MA0_2F					
Question		Working	Answer	Mark	Notes
13	(a)		Odd	1	B1 cao
	(b)		$5n$	1	B1 cao
	(c)		$\frac{t}{4}$	1	B1 oe
14	(a)		Angle drawn	1	B1 cao
	(b)		Triangle drawn	2	M1 intersecting arcs of radii 6 cm or an accurate triangle with no arcs A1 for a fully correct triangle with arcs
15			19	2	M1 for $2 \times 6.5 + 3 \times 2$ <b>or</b> 13 and 6 A1 cao
16			Data collection sheet	3	B3 for a <b>table</b> with all 3 aspects: column/row heading 'sport' or list of at least 3 sports column/row heading 'tally' or tally marks (or key) column/row heading 'frequency' or totals oe (B2 for a table with 2 of the 3 aspects) (B1 for a table with 1 of the 3 aspects) NB: 0 marks for questionnaires and graphs

PAPER: 1MA0_2F				
Question	Working	Answer	Mark	Notes
17		3.2 m - 5 m	3	M1 man's height seen as 1.6 m - 2 m oe or 5 ft 3 in - 6 ft 7 in oe M1 for $2$ to $2.5 \times$ 'man's height' A1 for 3.2 m - 5 m oe or 10 ft 6 in - 16 ft 6 in oe (units needed)
18		11.25	3	M1 for $40 \div 8 (= 5)$ M1 (dep) for finding the area of the triangle eg " $5$ " $\times 4.5 \div 2$ A1 cao
19	(a)	3.5	1	B1 cao
	(b)	8	2	B2 cao (B1 for 17.68 or 2.21)
20	(a)(i)	Shapes completed	2	B1 for correct shape
	(ii)			B1 for correct shape
	(b)	Shape enlarged	2	B2 correct enlargement drawn (B1 for correct enlargement in one direction or a correct enlargement with scale factor other than 2)
21	(a)	2:3	1	B1 cao
	(b)	$\frac{3}{5}$	2	M1 ft for adding the numbers in their ratio to get an acceptable total AND using this as their denominator eg $4 + 6 = 10$ or $2 + 3 = 5$ A1ft $\frac{3}{5}$ oe

PAPER: 1MA0_2F					
Question		Working	Answer	Mark	Notes
22	(a)		Point plotted	1	B1 cao
	(b)		positive	1	B1 cao
	(c)		18 - 22	2	M1 for a single line segment with positive gradient that could be used as a line of best fit or a vertical line from 10 or a point plotted at (10, y) where y is in the range 18 - 22 A1 18 - 22
	(d)		45	1	B1 cao
23			32 64 29	4	M1 for $2y$ or $y - 3$ M1 for adding their three expressions and setting equal to 125 M1 for correct method to solve $ay + b = 125$ A1 Ali 32, Bhavara 64 and Ceris 29
24		$0.65 \times 80 = 52$ $\frac{5}{8} \times 80 = 50$ $\frac{5}{8} = 0.625, 62.5\%$ $0.65 - 0.625 = 0.025$ $0.025 \times 80$	2	4	M1 for method to calculate the time Celina sings M1 for method to calculate the time Zoe sings M1 (dep on at least M1) for finding the difference between two times A1 cao  Or M1 for a conversion to all decimals, fractions or percentages M1 for finding their difference in their chosen system M1 (dep on at least M1) for using their proportional difference multiplied by 80 A1 cao

PAPER: 1MA0_2F					
Question		Working	Answer	Mark	Notes
25	(a)		$n^2$	1	B1 cao
	(b)		$a^7$	1	B1 cao
*26			No not enough	5	M1 for substituting into Pythagoras' theorem M1 for complete correct use of Pythagoras' theorem M1 for a complete method to find the perimeter of the trapezium A1 51.(20655..) C1 (dep on first two Ms) for correct conclusion dependent upon supporting calculations
*27			125ml	4	M1 for a complete method to find the cost per ml or the number of ml per £1 for one tube or for a method that results in at least two values that can be used to compare two tubes M1 for a complete method to find all three equivalent figures A1 3 correct figures suitable for comparison C1(dep on M2) for stating the correct tube size from their calculations

Q27	Per 25ml	Per ml	Per £
50ml	54.5	2.18	45.87155...
75ml	56	2.24	44.64285...
125ml	53.8	2.152	46.46840...





## 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: 1MA0_2F			
Question		Modification	Notes
Q01		Models are provided for all candidates. Diagram also provided for MLP	
Q03		Wording added: "There are two spaces to fill."	
Q04	(a)	MLP only: x changed to y Diagram is enlarged. Wording added: "There are two spaces to fill."	
Q05	(c)	MLP only: x changed to y.	
Q06		Grid enlarged. Last 3 columns removed.	
Q07		Patterns placed vertically with the start of no. 4 put below no.3. Wording changed. "Pattern number 4 has been started below pattern number 3. Complete pattern number 4."	
Q08	(a)	Diagrams enlarged Dotty shading added	
Q09		"Local gas" row removed.	

PAPER: 1MA0_2F			
Question		Modification	Notes
Q14	(a)	Line given is 10 cm.	
Q14	(b)	Base line of 6 cm given.	
Q15		MLP only: g changed to f.	
Q17		Outline and wheels of bus given. "Bus" written inside. Dashed line from man's head over to bus – labelled "height of man." Dashed line from top of bus stretching to the right and labelled "height of bus." "ground" labelled. Diagram enlarged.	
Q18		Diagram enlarged, measurement arrows removed.	
Q20	(a)	Diagram is enlarged.	
Q20	(b)	Transformation drawn on diagram. Wording changed: "The diagram shows triangle P and triangle Q on a grid. Describe the single transformation that maps triangle P on to triangle Q." Diagram enlarged. Answer lines added.	
Q22		Grid enlarged. Crosses changed to filled in circles. Right axis labelled.	
Q25	(b)	All candidates: a changed to y.	
Q26		Diagram enlarged and labelled ABCD. Measurement lines removed. Information given in text.	
Q27		Diagram removed.	



