Mark Scheme (Results)

November 2014

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

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

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 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.

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

PAPER: 1MA0_1F					
Question		Working	Answer	Mark	Notes
1	(a)		Lhotse	1	B1 cao
	(b)		8200	1	B1 cao
	(c)		Seven thousand four hundred and twenty-eight	1	B1 for any unambiguous answer
	(d)		8051	1	B1 cao
2	(a)		4,8,3,3,2	2	M1 for at least 2 tallies or 2 frequencies correct A1 for 5 correct frequencies
	(b)		correct graph	3	M1 for bar chart or other suitable chart with at least 2 correct frequencies drawn for their scale (ft from (a)) M1 for all bars labelled and vertical axis correctly scaled A1 for accurately representing their data, with all labels, ft from (a)
3	(a)		56 000	1	B1 cao
	(b)		276	1	B1 cao
	(c)		6	1	B1 cao
	(d)		29	1	B1 cao
	(e)		13	1	B1 cao

PAPER: 1MA0_1F					
Question		Working	Answer	Mark	Notes
4			3	3	M1 for attempt to find number of bags needed eg 254 ÷ 20 oe (= 12.7) **or** 12 **or** 13 M1 (dep) for "254 ÷ 20" ÷ 5 oe (= 2.4) A1 cao **OR** M1 for 5 × 20 (=100) M1 (dep) for intention to find how many "100" in 254 (= 2.54) A1 cao
5	(a)		B or C	1	B1 for B **or** C **or** B and C
	(b)		G, E	2	B1 for G; B1 for E
	(c)		Hexagon	1	B1 cao
	(d)		Parallelogram	1	B1 cao
6	(a)		$3m$	1	B1 cao
	(b)		$7e$	1	B1 cao
	(c)		$15g$	1	B1 cao
7	(a)		31	2	M1 for $3 \times 5 + 2 \times 8$ **or** 15 and 16 A1 cao
	(b)		$6x + 8y$	2	M1 for $6x$ **or** $8y$ A1 for $6x + 8y$ oe as final answer

PAPER: 1MA0_1F					
Question		Working	Answer	Mark	Notes
*8		Tables-R-Us $120 + (120 + 2 \times 40) = 320$ Fred's Furniture $120 + (32 \times 6) = 312$ Tables 'n Chairs $120 + (3 \times 70) = 330$	Fred's Furniture with working	4	M1 for correct method to find total cost of chairs (and table) for at least one shop M1 for correct method to find total cost of chairs (and table) for at least two shops A1 for 3 comparable totals (eg. chairs £200, £192, £210 **or** table and chairs £320, £312, £330) C1 (dep on M1) ft for correct statement with shop name from comparable figures
9			48	2	M1 for method to find 15% of 320 A1 cao
10	(a)		5	1	B1 cao
	(b)		evens	1	B1 cao
	(c)		$\frac{2}{6}$ oe	2	M1 for $\frac{a}{6}$ where $a < 6$ **or** $\frac{2}{b}$ where $b > 2$ A1 for $\frac{2}{6}$ oe
11	*(a)		No with working	2	M1 for $19.5 + 22.8 \ (= 42.3)$ **or** $40 - 19.5 - 22.8 \ (= -2.3)$ **or** $22 + 19 \ (= 41)$ C1 for statement with No and 42.3 **or** ± 2.3 **or** 41 seen
	(b)		12 40	3	M1 for correct start eg. addition of two times **or** subtraction of one time from 1430 M1 for a complete method A1 for 12 40 (pm)

Question		Working	Answer	Mark	Notes
12			126 or 176	4	M1 for correct unit conversion of 2 m or 3 m or 20 cm M1 for method to find number in width or number in length **or** 14 or 9 or 16 or 11 M1 (dep on M1) for "number in length" × "number in width" eg 14 × 9 eg 16 × 11 A1 for 126 or 176
*13			Amsterdam with figures	3	B1 for a correct conversion from miles to km or km to miles eg 8 km = 5 miles eg 28 miles = 44 km M1 for a correct method to convert 280 miles to km or 500 km to miles **or** 420 – 460 (km) **or** 300 − 320 (miles) C1 (dep on M1) for statement with correct conclusion and correct conversions (420 – 460 km or 300 – 320 miles)
14			correct shape	2	M1 for at least 2 correctly enlarged sides A1 for correct shape **SC:** B1 for a fully correct enlargement scale factor 2 or 4
15	(a)		18	1	B1 cao
	(b)		56	1	B1 cao
	(c)		33	2	M1 for 23 and 56 identified A1 cao

PAPER: 1MA0_1F				
Question	Working	Answer	Mark	Notes
*16		No with reason	3	M1 for 17, 20 .**or** + 3 **or** $3n + 2$ M1 for method to show that 34 is not in the sequence eg continue sequence to at least 32 eg attempt to solve $3n + 2 = 34$ C1 (dep on M2) for statement with conclusion eg No with 32, 35 shown eg $n = 32 \div 3$ which is not a whole number
17		700 cm^3	3	M1 for $20 \times 5 \times 7$ A1 for 700 B1 (indep) for cm^3
18		4	3	B1 for $11.8 - 12.2$ (cm) or $1180 - 1220$ (km) M1 for "12" $\times 100 \div 300$ oe A1 for $3.9 - 4.1$ from correct figures or ft from "12" $\times 100 \div 300$ oe
19		1340	4	M1 for 500×4 (= 2000) M1 for $960 - 300$ (= 660) or "2000" + 300 (= 2300) or "2000" $- 960$ (= 1040) M1 (dep on M2) for a fully correct method eg "2000" – "660" or "2300" – "960" or "1040" + 300 A1 cao

Question		Working	Answer	Mark	Notes
20	(a)		$\dfrac{5}{12}$	2	M1 for $\dfrac{150}{360}$ or equivalent fraction A1 cao
	(b)		42	2	M1 for $60 \div 12$ $(= 5)$ **or** $210 \div 60$ $(= 3.5)$ oe A1 cao
	(c)		not enough information	1	B1 for 'not enough information' ticked **and** appropriate explanation given
21			25	4	M1 for $600 \div 4$ $(= 150)$ M1 for $4500 \div$ "150" $(= 30)$ M1 for $750 \div$ "30" A1 for 25 with supporting working **OR** M1 for $4500 \div 750$ $(= 6)$ M1 for $600 \div 4$ $(= 150)$ or $600 \div$ "6" $(= 100)$ M1 for "150" $\div$ "6" or "100" $\div 4$ A1 for 25 with supporting working **OR** M1 for $4500 \div 750$ $(= 6)$ or $750 \div 4500$ $(= \frac{1}{6})$ M1 for $\dfrac{1}{4} \times "\dfrac{1}{6}"$ $\left(= \dfrac{1}{24} \right)$ M1 for $"\dfrac{1}{24}" \times 600$ A1 for 25 with supporting working

Question		Working	Answer	Mark	Notes
*22			130 + correct reasons	4	M1 for angle BFG = 65 (may be seen on diagram) M1 (dep) for correct method to calculate x eg (x =) 65 + 65 (= 130) **or** (x =) 180 − (180 − 2 × 65) (= 130) C2 for x =130 **and** full appropriate reasons related to method shown (C1 (dep on M1) for any one appropriate reason related to method shown) eg alternate angles are equal ; base angles in an isosceles triangle are equal; angles in a triangle add up to 180°; angles on a straight line add up to 180°; exterior angle of triangle = sum of two interior opposite angles co-interior angles (allied angles) add up to 180°
23	(a)		2 reasons	2	B2 for two different reasons (B1 for 1 reason) eg No units (of distance) eg Overlapping intervals (2 and/or 3 in two boxes) eg Missing box (no box for more than 6 (km/miles) or 'other' or 4.5 (km/miles))
	(b)		Question	2	B1 for a suitable question which includes a time frame (time frame could appear with response boxes) B1 for at least 3relevant non-overlapping **and** exhaustive response boxes [Do not allow inequalities in response boxes]

PAPER: 1MA0_1F					
Question		Working	Answer	Mark	Notes
24	(a)		$e(3e + 5)$	1	B1 for $e(3e + 5)$
	(b)		4	3	M1 for intention to expand brackets eg $7k - 21$ **or** division of all terms on RHS by 7 as a first step M1 for correct method to isolate terms in k in an equation A1 cao
	(c)		$a = 2f - 1$	2	M1 for a correct first step eg intention to multiply both sides by 2 A1 cao
25			$2 \times 2 \times 3 \times 3 \times 5$	3	M1 for continual prime factorisation (at least two consecutive steps correct) **or** at least two stages of a factor tree correct M1 for a fully correct factor tree **or** list 2, 2, 3, 3, 5 A1 for $2 \times 2 \times 3 \times 3 \times 5$ or $2^2 \times 3^2 \times 5$
26			9	4	M1 for method to find the area of one rectangle eg 15×8 (=120) or 15×11 (=165) M1 (dep) for subtraction from/by given area eg $138 -$ "120" (=18) or "165" $- 138$ (=27) M1 for final step from complete method shown eg $15 -$ "18"$ \div 3$ or for "27" $\div 3$ A1 cao **OR** M1 for a correct expression for the area of one rectangle eg $(8 + 3) \times (15 - x)$ or $8 \times x$ M1 (dep) for a correct equation eg $(8 + 3) \times (15 - x) + 8 \times x = 138$ M1 for correct method to isolate x eg $3x = 27$ A1 cao

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: ±5°
Measurements of length: ±5 mm

PAPER: 1MA0_1F			
Question		**Modification**	**Notes**
1		Take out Jannu	
2	(b)	Table layout modified 2 cm grid provided with 14 squares across and 12 squares up Space on left and at the bottom for labeling	
5		Shapes H and I removed	
7		*a* changed to *e* *c* changed to *f*	
10		Spinner straightened up,● at centre to represent spike	
13		2 cm grid provided	
14		1½ cm grid provided Enlargement given Question reversed – 'Describe fully the transformation that maps Shape A onto Shape B	

PAPER: 1MA0_1F			
Question		**Modification**	**Notes**
15		Horizontal lines inserted to separate rows	
17		Model provided	