Mark Scheme (Results)

November 2014

Pearson Edexcel GCSE
In Mathematics B (2MB01)
Foundation (Calculator) Unit 1

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: 5MB1F_01				
Question	Working	Answer	Mark	Notes
1. (a)		20	1	B1 cao
(b)		14	1	B1 cao
(c)		2 squares	2	B1 for 2 squares
		$4\frac{1}{2}$ squares		B1 for $4\frac{1}{2}$ squares
2. (a)		8	1	B1 cao
(b)	6+5+8+6+7+7+8 +8+8+6 = 69 69÷10	6.9	2	M1 for complete correct method to find mean e.g. sum ÷ 10 A1 for 6.9
(c)		3	2	M1 for 8 − 5 or 5 − 8 or −3 A1 cao
(d)		No with reason	1	B1 for No and reason e.g. 7 is between highest and lowest
3. (a)		Reed Farm	1	B1 cao
(b)		Rosewood	1	B1 cao
(c)		£545	1	B1 cao

PAPER: 5MB1F_01				
Question	Working	Answer	Mark	Notes
4.		£4.45	3	M1 for adding 3 different prices (e.g. 3.00 + 3.50 + 2.95 (= 9.45)) or selecting the 3 highest prices M1 for complete method to find difference between total of 3 highest normal prices and £5 A1 cao
*5.		Diagram or chart	4	M1 for key or suitable labels to identify max and min M1 for 5 correct day labels or a linear scale M1 for diagram or chart (combined or separate) set up for comparison, correctly showing data for at least 3 days C1 for fully correct diagram or chart with axes correctly scaled and labelled
6. (a)		1418	1	B1 cao
(b)		Correct plan showing departure times and arrival times for 2 train journeys.	4	B1 for a departure time from Cromer of 10 57, 11 57 or 12 57 M1 for an arrival time at Norwich which is no later than 13 41 M1 for adding 30 minutes to 16 55 or correct departure time. A1 all train departure and arrival times correct (10 57 and 11 41 or 11 57 and 12 41 or 12 57 and 13 41 AND 17 45 (and 18 36))
7. (a)		Cross at $\frac{3}{10}$	1	B1 for cross at $\frac{3}{10}$
(b)		Cross at 0	1	B1 for cross at 0
(c)		I	1	B1 cao
8.		3	2	M1 for working out or using a correct duration of time. A1 cao

PAPER: 5MB1F_01

Question	Working	Answer	Mark	Notes
9.		Correct pairs 3,7 or 4,6 or 2,8 or 5,5	2	B2 for 2 pairs from 5,5 or 3,7 or 4,6 or 2,8 (B1 for one pair) (Note: Condone non-integers if correct pair(s) given)
*10		London is more expensive	4	M1 for reading from the graph, e.g. £10 = €12 or €7 = £5.80 M1 for a complete method to convert either £60 into € or €70 into £ A1 for answer in interval €71 to €72 or in interval £57 to £59 C1 ft (dep on M1) for correct conclusion for their figures using consistent units
11.		165	3	M1 for correct method to find 5% of 300 or $\frac{2}{5}$ of 300 M1 (dep) for 300 – "15" – "120" A1 cao OR M1 for 1 – 0.05 – 0.4 (= 0.55) M1 (dep) for "0.55" × 300 A1 cao

PAPER: 5MB1F_01

Question		Working	Answer	Mark	Notes
12.	(a)		22	1	B1 cao
	(b)		23	3	M1 for correct method to find total women who came by bus, e.g. 13 – 6 (=7) M1 for correct method to find women who came by train, e.g. 22 – 7 – 4 (=11) A1 cao OR M1 for correct method to find men who came by car, e.g. 28 – 6 – 12 (= 10) M1 for correct method to find total who came by car, e.g. 10 + 4 (= 14) A1 cao
	(c)		$\frac{3}{7}$	2	M1 for $\frac{12}{28}$ oe A1 oe
13.			30	2	M1 for 0.6 × 50 oe A1 cao
14.			$\frac{x+x+5+2x}{3}$	2	M1 for intention to add x, $x + 5$, $2x$ or $4x + 5$ seen or ambiguous answer, e.g. "$4x + 5$" ÷ 3 A1 for $\frac{x+x+5+2x}{3}$ oe

PAPER: 5MB1F_01				
Question	**Working**	**Answer**	**Mark**	**Notes**
15. (a)		2 different reasons	2	B1 for a reason relating to: Bias – due to gender or due to railway station location Size of sample too small B1 for one other reason
(b)		Question and response boxes	2	B1 for a suitable question with time period and units in question or response boxes B1 for at least 3 non-overlapping and exhaustive response boxes
16.		12 │ 3 5 9 13 │ 0 3 3 5 7 8 14 │ 7 7 8 9 15 │ 0 1	3	B2 for a fully correct ordered diagram (B1 for correct unordered diagram or ordered with at most two errors) B1 for correct key eg 12 | 3 means 123 (cm)
17. (a)		Point at (47, 34)	1	B1 point plotted
(b)		Positive	1	Positive (correlation)
(c)		48 to 51 inclusive	2	M1 for a single straight line segment with positive gradient that could be used as a line of best fit or a horizontal line from 35 or point marked at (*n*, 35) A1 for given answer in the range 48 – 51

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: 5MB1F_01		
Question	**Modification**	**Notes**
1	Key top left. Pictures size x 2½	
3	Table: Location column removed	
5	Table: Friday row removed, Saturday – 17 changed to 12 Grid: Vertical axis – 15 x 2 cm squares, horizontal axis 10 x 2 cm squares Room left for labelling on the left and below.	
6	Table: North Walsham now removed from both tables. 1057 and 1557 removed from Cromer to Norwich 1445 and 1955 removed from Norwich to Cromer	
7	Probability scales lengthened	
10	1½ cm grid. Inside measurements of squares are 1.4 cm. Right axis labelled	

PAPER: 5MB3H_01			
Question		Modification	Notes
12		Braille: (i) is put in total women and (ii) in train total	
16		Diagram enlarged. 4th horizontal line drawn in at the bottom.	
17		1½cm grid. Inside measurements of squares are 1.4 cm. Crosses changed to filled in circles. Right axis labelled	