edexcel

Mark Scheme (Results)

Summer 2013

GCSE Mathematics (2MB01) Foundation
5MB2F (Non Calculator) Paper 01

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. 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 for our BTEC qualifications.
Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

If you have any subject specific questions about this specification that require the help of a subject specialist, you can speak directly to the subject team at Pearson.
Their contact details can be found on this link: www.edexcel.com/teachingservices.

You can also use our online Ask the Expert service at www.edexcel.com/ask. You will need an Edexcel username and password to access this service.

Pearson: helping people progress, everywhere
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

Summer 2013
Publications Code UG037233
All the material in this publication is copyright
© Pearson Education Ltd 2013

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. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.

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. Examiners should also 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 indicate within the table where, and which strands of QWC, are being assessed. 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 labeling 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.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.

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 canceling 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.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

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.

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 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)		Three thousand four hundred and sixty	1	B1 oe
	(b)		300	1	B1 cao
	(c)		6.04,6.37,6.48,6.5(0),6.59	1	B1 cao
2	(a)		obtuse	1	B1 cao
	(b)		125	1	B1 accept 123 to 127
3	(a)		65	1	B1 accept 64 to 66
	(b)		1.7	2	M1 for 3.4 ÷ 2 A1 cao
4	(a)		– 4	1	B1 cao
	(b)		3	1	B1 for 3 or – 3
	(c)		4	1	B1 cao
5	(a)		$4y$	1	B1 cao
	(b)		$5cd$	1	B1 cao
	(c)		$5a + 3b$	2	M1 for partial simplification $5a$ **or** $+3b$ A1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
6	(a)		7	1	B1 for 7 or – 7
	(b)		27	1	B1 cao
7	(a)		Isosceles triangle	1	B1 for isosceles triangle
	(b)		Rectangle with perimeter 10 cm	2	M1 for any rectangle or for a shape with perimeter 10 cm A1 cao
8			4.20	4	B1 for using 7.55, 5.65 and 6.05 M1 for adding 2 adult identical price tickets, and 2 child tickets (=26.8(0)) M1(dep on M1) for "26.80" – 22.60 or "26.80" – 19.00 A1 4.20 or 4.20p
9	(a)		$\frac{7}{10}$	1	B1 for $\frac{7}{10}$ oe
	(b)		30	1	B1 cao
	(c)		$\frac{2}{3}$	1	B1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
10	(a)		1008	1	B1 cao
	(b)		28	1	B1 cao
	(c)		1118	1	B1 cao
11	(a)		6	1	B1 cao
	(b)		Accurate drawing	2	B1 for at least one face correct or for any isometric drawing of a cuboid B1 accurate isometric drawing, any orientation Ignore presence of hidden lines
12	(a)		5	1	B1 for 5
	(b)		60	2	M1 for converting £ to Euros on the graph and multiplying appropriately e.g. £10 = 12euros and 5 × 12 A1 for 60

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
13			90	4	M1 for 200 ÷ 5 (=40) M1 for correct method to find 35% of 200 (=70) M1 (dep on M1) for 200 – "40" – "70" A1 cao OR M1 for 35(%) + 20(%) (=55%) M1 for a correct method to find "55%" of 200 (=110) or 100(%) − 55% (=45%) M1 (dep on M1) for 200 – "110" or a correct method to find "45%" of 200 A1 cao OR M1 for correct fractions with common denominator $\frac{35}{100}+\frac{20}{100}$ oe M1 for a correct method to find "$\frac{55}{100}$" oe of 200 (=110) or 1−"$\frac{55}{100}$"= "$\frac{45}{100}$" oe M1 (dep on M1) for 200−"110" or a correct method to find "$\frac{45}{100}$" oe of 200 A1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
14		Reasons: base angles of isosceles triangle are equal **with either** angles in a triangle add up to 180° **and** angles on a straight line add up to 180° **or** angles in a triangle add up to 180° **and** (exterior angle of a triangle is equal to the sum of the interior opposite angles) **or** angles in a triangle add up to 180°	60° with reasons	4	M1 for angle $DCB = 20^o$ M1 for a complete method to find x C1 (dep on at least M1) for one reason with correct geometrical language used C1 (dep on M2) for 60 with full reasons with correct geometrical language used

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
15			90	3	M1 for one division (eg 60 ÷ 10), may be implied by correct number of marks on the diagram or correct number on one edge of diagram or eg 6×10, or by two of 6, 5 and 3 seen M1 for $(60 \div 10) \times (50 \div 10) \times (30 \div 10)$ A1 cao OR M1 for $10 \times 10 \times 10$ or $60 \times 50 \times 30$ M1 for $(60 \times 50 \times 30) \div (10 \times 10 \times 10)$ A1 cao
16	(a)		$5m + 10$	1	B1 cao
	(b)		$y(y + 3)$	1	B1 cao
	(c)		a^9	1	B1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
17		250 ÷ 100 = 2.5 300 ÷ 50 = 6 600 ÷ 120 = 5 60 ÷ 15 = 4	40	3	M1 for 250 ÷ 100 or 300 ÷ 50 or 600 ÷ 120 or 60 ÷ 15 M1 for 250 ÷ 100 **and** 16 × '2.5' or 2.5 oe seen **and** 16 × '2.5' A1 cao **SC** M2 (16+16+16÷2) oe A1 cao **SC** M2 $(250 \div \frac{100}{16})$oe A1 cao

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
18		<table><tr><td>x</td><td>–2</td><td>–1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>–5</td><td>–3</td><td>–1</td><td>1</td><td>3</td><td>5</td></tr></table> OR Using $y = mx + c$, gradient = 2, y intercept = – 1	Line $y = 2x – 1$ drawn	3	**(Table of values)** M1 for at least 2 correct attempts to find points by substituting values of x M1 (dep) ft for plotting at least 2 of their points (any points plotted from their table must be correct) A1 for correct line between $x = – 2$ and $x = 3$ **(No table of values)** M2 for at least 2 correct points (and no incorrect points) plotted OR line segment of $y = 2x – 1$ drawn (ignore any additional incorrect segments) (M1 for at least 3 correct points with no more than 2 incorrect points) A1 for correct line between $x = – 2$ and $x = 3$ **(Use of $y = mx + c$)** M2 line segment of $y = 2x – 1$ drawn (ignore any additional incorrect segments) (M1 for line drawn with gradient of 2 OR line drawn with y intercept of – 1 and a positive gradient) A1 for correct line between $x = – 2$ and $x = 3$

PAPER: 5MB2F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
19		$4.5 \times 2 + 3 \times 2 = 15$ or $4 \times 3 + 2 \times 1.5 = 15$ or $4 \times 4.5 - 2 \times 1.5 = 15$	7	4	M1 for a correct method to calculate at least one area using correct dimensions M1 for a complete method to find the total area (can be implied by 15) M1 for "15" ÷ 2.25 (=6.66…) or 2.25 × 6 (=13.5) or 2.25 × 7 (=15.75) or repeated addition to within 2.25 of "15" C1 (dep on at least 1 method mark) for 7 packs clearly identified and supported by their calculations

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		**Modifications**	**Notes**
2	(b)	Scales enlarged and simplified	Accept 120 - 130
5	(c)	a changed to e, b to f	M1 for a partial simplification 5*e* or +3*f* A1 for 5*e* + 3*f*
7		2cm grids (a) 'of centimetre square ' removed .(b)'On the grid of squares..'wording added: Each square on the grid represents a one centimetre square .'	M1 for any rectangle or for a shape with a perimeter of 10 cm (actual) or 10 cm (using the squares) A1 for a rectangle with a perimeter of 10 cm (actual) or 10 cm (using the squares)
11		Part (a) and (c) have a model as well as adiagram . Part (a):no measurements put on them Part (b):Question changed as follows: 'Look at the diagram for Question 11(b).On the centimetre isometric grid, a cuboid has been drawn. Write down the length of the three dimensions 4cm by 3cm by 5cm.	B2 marks for 4 cm by 3 cm by 5 cm. (B1 for 2 of the dimensions correctly given (and one incorrect or missing))

PAPER: 5MB2F_01			
Question		**Amendment**	**Notes**
12		Both axes 2cm for 1	Standard mark scheme
15		Both models and diagram are provided	Standard mark scheme
16	(c)	MLP only : a changed to e	B1 for e^9
18		2cm grid top row removed	Standard mark scheme

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com

Order Code UG037233 Summer 2013

For more information on Edexcel qualifications, please visit our website
www.edexcel.com

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Rewarding Learning