Mark Scheme (Results)

March 2013

GCSE Mathematics (2MB01) Foundation
5MB1F (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

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 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.
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 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.
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

5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		6, 7, 4, 3	2	M1 for at least 2 correct frequencies or 2 correct tallies A1 for all frequencies correct (with or without the tally column completed or incorrectly completed)
	(b)		Bus	1	B1 ft from frequency column or from tally column if different to frequency
2	(a)		3	2	M1 for ordering at least 8 of the numbers or indicating the middle value of the unordered numbers A1 cao
	(b)		8	2	M1 for 9 – 1 (accept 1 – 9 or 9 to 1 or 1 to 9) A1 cao
3	(a)		grams or kilograms	1	B1 for grams or kilograms
	(b)		litres	1	B1 for litres, accept any cubic unit
	(c)		metres	1	B1 for metres, accept millimetres

5MB1F_01

Question		Working	Answer	Mark	Notes
4	(a)		4	1	B1 cao
	(b)		5	1	B1 cao
	(c)		○○○ ◖	2	B1 cao for Match 6 B1 cao for Match 7
5	(a)		1.45	1	B1 cao
	(b)	1.15 + 2.49	3.64	2	M1 for 1.15 + 2.49 A1 cao
	(c)		B and D	2	M1 for adding two of the prices or 3.94 – 'any price' A1 for B and D in any order SC B1 for answer of 1.45 and 2.49 if M0 scored
6			$\dfrac{1}{8}$	1	B1 for $\dfrac{1}{8}$ oe
7	(a)		$\dfrac{1}{2}$	1	B1 for mark at $\dfrac{1}{2}$ within overlay
	(b)		$\dfrac{1}{6}$	1	B1 for mark at $\dfrac{1}{6}$ within overlay
	(c)		1	1	B1 for mark at 1 within overlay

5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
*8			Comparison leading to £4.32	3	M1 for a method to work out the cost of 36 pencils M1 for a process that leads to a comparison C1 dep on a previous M1 for a clear statement/indication that Oliver spends £4.32 or that it is cheaper to buy the pencils singly with £4.32 seen NB Working can be in pounds or pence
9	(a)		2.5	1	B1 cao
	(b)		2008	1	B1 cao
	(c)		Correct statement	1	B1 for a correct statement, e.g. profit increased, profit went up by 2 million pounds
10			7	3	M1 for 4×6 (= 24) or $4 + 6 + 7$ (= 17) M1 (dep) for "24" – "17" A1 cao
11			C,H C,A C,S P,H P,A P,S F,H F,A F,S	2	B2 for all 9 correct combinations with no incorrect combinations or duplicates (B1 for at least 4 correct combinations, i.e. (C, H) and 3 more)

5MB1F_01				
Question	**Working**	**Answer**	**Mark**	**Notes**
*12		Diagram or chart	4	B1 for a key, or suitable labels, to identify minimum and maximum temperatures. B1 for diagram(s) or chart(s) set up for comparison, showing data for at least 4 months, e.g. dual bar chart, line graph, etc B1 for correct heights for minimum temperatures or maximum temperatures, dependent on a linear scale C1 for a fully correct diagram or chart to include 5 months labelled and temperature axis correctly scaled and labelled
13		490	4	M1 for $\frac{1}{10} \times 700$ (= 70) M1 for $\frac{1}{5} \times 700$ (= 140) M1 (dep on M1) for 700 – ("70" + "140") A1 cao OR M1 for $\frac{1}{10} + \frac{1}{5}$ or $\frac{3}{10}$ oe M1 for $1 - \frac{3}{10}$ or $\frac{7}{10}$ or $\frac{3}{10} \times 700$ or 210 M1 (dep on M1) for " $\frac{7}{10}$ "× 700 or 700 – "210" A1 cao

5MB1F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
14		$2x$ $x+3$ $x+2x+x+3$	$x+2x+x+3$	2	M1 $2x$ or $x+3$ A1 $x+2x+x+3$ oe
*15			Yes	6	B1 283 or 285 M1 for working out the total cost of 2 adults one way or 1 adult both ways M1 for a correct method for calculating a child fare as 75% of an adult fare for one or both journeys M1 for working out the total cost for 2 adults and 1 child A1 for 1562 or 38 C1 dep on a previous M1 for correct conclusion ft for their total cost (identified) provided it is written with a £ sign.

5MB1F_01						
Question		**Working**		**Answer**	**Mark**	**Notes**
16		<table><tr><td></td><td>TT</td><td>D</td><td>S</td><td></td></tr><tr><td>B</td><td><u>**7**</u></td><td>12</td><td>4</td><td><u>**23**</u></td></tr><tr><td>G</td><td>4</td><td><u>**8**</u></td><td><u>**5**</u></td><td>17</td></tr><tr><td></td><td>11</td><td>20</td><td><u>**9**</u></td><td><u>**40**</u></td></tr></table>		11	4	M1 for a 2-way table or diagram showing at least 3 pieces of information correctly placed M1 17 girls or 4 boys with slalom skis M1 12 boys with downhill skis or 4 girls with twin tips A1 cao OR M1 for 40 – 23 (= 17) M1 for one part subtraction ie "17" – 8 or "17" – 5 M1 for ("17" – 8) – 5 or ("17" – 5) – 8 A1 cao
17	(a)			Two different reasons	2	B2 for TWO aspects from No time frame given Non-exhaustive responses Responses not specific (B1 ONE correct aspect)
	(b)			Question	2	B1 for a question with a time frame for frequency of use B1 for at least 3 correctly labelled response boxes (non-overlapping, need not be exhaustive) OR for a set of response boxes that are exhaustive (could be overlapping) [Do not allow inequalities in response boxes]
	(c)			Two different reasons	2	B2 for TWO different aspects (B1 for ONE aspect) Too small a sample, time of day, specific day, place, same type of people, not random

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

cea

Rewarding Learning