



Pearson

Mark Scheme

Mock Set 2

Pearson Edexcel GCSE Mathematics (1MA1)
Foundation Tier (Calculator)
Paper 3F

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

Publications Code

All the material in this publication is copyright

© Pearson Education Ltd 2017

General marking guidance

These notes offer general guidance, but the specific notes for examiners appertaining to individual questions take precedence.

- 1** All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.

Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification/indicative content will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the response should be sent to review.

- 2** All the marks on the mark scheme are designed to be awarded; mark schemes should be applied positively. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no 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.

Questions where working is not required: In general, the correct answer should be given full marks.

Questions that specifically require working: In general, candidates who do not show working on this type of question will get no marks – full details will be given in the mark scheme for each individual question.

- 3** **Crossed out work**

This should be marked **unless** the candidate has replaced it with an alternative response.

- 4** **Choice of method**

If there is a choice of methods shown, mark the method that leads to the answer given on the answer line.

If no answer appears on the answer line, mark both methods **then award the lower number of marks.**

- 5** **Incorrect method**

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 for your Team Leader to check.

6 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working as you can check the answer, 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.

7 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 or its context. (eg. an incorrectly cancelled fraction when the unsimplified fraction would gain full marks).

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect (eg. incorrect algebraic simplification).

8 Probability

Probability answers must be given as a fraction, percentage or decimal. 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.

9 Linear equations

Unless indicated otherwise in the mark scheme, full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously identified 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).

10 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 all numbers within the range.

Guidance on the use of abbreviations within this mark scheme

- M** method mark awarded for a correct method or partial method
- P** process mark awarded for a correct process as part of a problem solving question
- A** accuracy mark (awarded after a correct method or process; if no method or process is seen then full marks for the question are implied but see individual mark schemes for more details)
- C** communication mark
- B** unconditional accuracy mark (no method needed)
- oe** or equivalent
- cao** correct answer only
- ft** follow through (when appropriate as per mark scheme)
- sc** special case
- dep** dependent (on a previous mark)
- indep** independent
- awrt** answer which rounds to
- isw** ignore subsequent working

Foundation tier Paper 3F (Calculator): Mock (Set 2) Mark Scheme

Question	Working	Answer	Mark	Notes
1 (a)		Mark at $\frac{1}{2}$	B1	Answer at $\frac{1}{2}$
(b)		Mark at $\frac{1}{6}$	B1	Answer at $\frac{1}{6}$
2		2750	B1	cao
3		Diameter Radius Chord Tangent	B2 (B1)	for a fully correct answer for 2 or 3 correct answers
4		65 and 130 or 53 and 106	P1 A1	for 65 or 53 used 65 and 130 or 53 and 106

Question	Working	Answer	Mark	Notes
5 (a)		3	M1 A1	for expanding the bracket or the intention to divide both sides by 2 as the first step oe cao
(b)		4	M1 A1	for an intention to subtract 7 from both sides or intention to divide both sides by 3 as the first step oe cao
(c)		$2(3n - 2)$	B1	$2(3n - 2)$ oe
(d)		$4cd$	B1	$4cd$
6 (a)		3	B1	cao
(b)		9	M1 A1	for selecting 1 and 10 cao
(c)		$\frac{15}{59}$	M1 M1 A1	for finding the number of words 6 or longer, e.g. $3 + 4 + 5 + 2 + 1$ for a method to find the total number of words, e.g. $5 + 8 + 12 + 10 + 9 + 3 + 4 + 5 + 2 + 1$ cao

Question	Working	Answer	Mark	Notes
7		Statement	C2 (C1)	for a correct statement, e.g. both obtuse angles are greater than 90 (but less than 180) and angles in a triangle add up to 180 for a correct statement, e.g. obtuse angles are greater than 90 (but less than 180) or angles in a triangle add up to 180)
8 (a)		14	B1	cao
(b)		330,170	P1 P1 A1	for a correct first step, e.g. $500 - 160$ or two integers that add to 500 or two integers (below 500) with a difference of 160 for a complete process to find either f or g for both values
9		24,72 and 192	M1 M1 A1	for $288 \div (1 + 3 + 8) (= 24)$ for a complete method to find the weight in the medium or the large box for 24, 72 and 192

Question	Working	Answer	Mark	Notes
10		35	P1 P1 P1 P1 A1	for start to process, e.g. $40 \div 4 \times 3 (= 30)$ or $120 \div 40 (= 3)$ (dep P1) for $(40 - "30") \div 2 (= 5)$ or $"30" \times 4.5 (= 135)$ or $"30" \times (4.5 - 3)$ (dep P2) for process to find income, e.g. $"30" \times 4.5 (=135)$ and $"5" \times 4 (= 20)$ for a complete process leading to profit, e.g. $"135"+ "20"-120$ cao
11	$\begin{array}{r l} 1 & 6 \ 8 \ 9 \\ 2 & 2 \ 2 \ 3 \ 3 \ 4 \ 5 \ 8 \\ 3 & 1 \ 3 \ 4 \\ 4 & 0 \ 1 \end{array}$ key 4 1 is 41	Diagram	B2 (B1) B1	for a fully correct diagram (for an ordered diagram with one error or omission or for an unordered diagram) for an appropriate key
12		15	B1 M1 A1	for a measurement given as 7.3 to 7.7 (cm) for $"7.5" \times 10 \div 5$ where $"7.5"$ is their measurement (dep M1) ft

Question	Working	Answer	Mark	Notes
13 (a)		0.97	P1 P1 A1	for start to process, e.g. $1000 \div 129$ or 7 packets (dep P1) for $10 - ("7" \times 1.29)$ where "7" is their number of packets cao
(b)		Comment	C1	comment, e.g. 28 is not a multiple of 6
14		70	M1 M1 A1	for method to find 3.5% of 400 , e.g. $0.035 \times 400 (= 14)$ (dep M1) for "14" $\times 5 (= 70)$ cao SCB2 for 470 or 330 if no other marks awarded
15		38	P1 P1 P1 A1 C1	for a process to begin the problem, e.g. 90% of 17 or number of bags per week (= 510) (dep P1) for a complete process to find the number of perfect bags per week e.g. "510" $\times 0.9 (= 459)$ (dep P1) for dividing the number of perfect bags by 12, e.g. "459" $\div 12 (= 38.25)$ 38.25 or 38 given as the answer ft For rounding their answer to a full number of boxes

Question	Working	Answer	Mark	Notes
16		$\frac{1}{2}, 3$	M1 M1 A1	for a correct method to eliminate one variable (condone one arithmetic error) (dep) for substituting found value in one of the equations or correct method after starting again (condone one arithmetic error) cao
17		22	P1 P1 A1	process to use gradient, e.g. $\frac{d-10}{5-2} = 4$ for a complete process to rearrange equation formed to isolate d cao
18		24.6	P1 P1 A1	process to use conversion rate, e.g. $100 \div 1.38 (= 72.46(37.))$ or $222 \times 1.38 (= 306.36)$ (dep P1) for complete process to find percentage required e.g. $72.46(37.) \div (72.46(37.) + 222) \times 100$ OR $100 \div (100 + 306.36) \times 100$ for answer in range 24.6 – 24.61

Question	Working	Answer	Mark	Notes
19 (a)		4	P1 P1 P1 P1 A1	for process to find area of at least 2 different faces, e.g. 95×18 and 80×18 for a complete process to find the surface area of one cushion, e.g. $(95 \times 18 + 80 \times 18 + 95 \times 80) \times 2$ for process to convert units, e.g. $80 \div 100 (= 0.8)$ (dep on P2) for their area multiplied by 6 and divided by 4 cao
(b)		Reduces requirement	P1 C1	for showing 4.4 is now covered or 2.93 tins or 3 tins (dep) Statement that the number required of tins will be reduced
20 (a)(i)		$\begin{pmatrix} 4 \\ 6 \end{pmatrix}$	B1	cao
(ii)		$\begin{pmatrix} 11 \\ 14 \end{pmatrix}$	M1 A1	for $\begin{pmatrix} 2 \\ 8 \end{pmatrix}$ oe or $\begin{pmatrix} 9 \\ 6 \end{pmatrix}$ oe cao
(b)		Diagram	B1	correct vector drawn

Question	Working	Answer	Mark	Notes
21 (a)		Graph drawn	M1	for a line of gradient $\frac{16}{9}$ drawn or at least 2 correct points plotted
			C1	for a fully correct graph drawn
(b)		48 - 52	B1	for answer in the range 48 - 52
22		9	M1	for $\sin 30^\circ = \frac{x}{18}$ or $18 \times \sin 30$
			A1	cao
23		207.50	M1	for a first step to solve the problem, e.g. $42.5 \div 17$
			M1	for a complete method
			A1	cao
24		4	B1	cao