



Pearson

Mark Scheme

Mock Set 4

Pearson Edexcel GCSE (9 – 1)
In Mathematics (1MA1)
Foundation (Calculator) Paper 3F

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Publications Code

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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 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.

11 Number in brackets after a calculation

Where there is a number in brackets after a calculation E.g. $2 \times 6 (=12)$ then the mark can be awarded **either** for the correct method, implied by the calculation **or** for the correct answer to the calculation.

12 Use of inverted commas

Some numbers in the mark scheme will appear inside inverted commas E.g. "12" \times 50 ; the number in inverted commas cannot be any number – it must come from a correct method or process but the candidate may make an arithmetic error in their working.

13 Word in square brackets

Where a word is used in square brackets E.g. [area] \times 1.5 : the value used for [area] does **not** have to come from a correct method or process but is the value that the candidate believes is the area. If there are any constraints on the value that can be used, details will be given in the mark scheme.

14 Misread

If a candidate misreads a number from the question. Eg. uses 252 instead of 255; method or process marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review.

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 awarded for a fully correct statement(s) with no contradiction or ambiguity
- 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

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	4700	B1	cao	
2	0.08	B1	cao	
3	2500	B1	cao	
4	(a) Mark at $\frac{1}{2}$ (b) Mark at $\frac{1}{6}$	B1 B1	for mark at $\frac{1}{2}$ for mark at $\frac{1}{6}$	Accept indications other than a cross, eg an arrow pointing to the correct position. Allow some tolerance if the intention is clear.
5	21 14	M1 A1	for 104 mins = 1 hr 44 mins or for method to count on 104 minutes from 19 30 for 21 14 or 9 14 pm	Answer of 9 14 or 9 14 am gets M1 A0
6	11	P1 P1 A1	for 55 – 16 (= 39) for “39” ÷ 3 (= 13) cao	
7	(a) 4 (b) Explanation	B1 C1	cao for explanation eg it got colder (so more gas used for heating)	Accept any reasonable explanation for an increase in gas used.
8	(a) 16 cm (b) Correct shape	B1 B1 B1	for 16 (indep) for cm for correct shape	Independent of first mark; can be awarded for cm alone or irrespective of number. Middle square in bottom row of A shaded

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9	(a) $5n$ (b) $4a - b$	B1 B2 (B1)	for $5n$ for $4a - b$ for $4a$ or $-b$	Accept $4a + -b$
10	Triangle drawn with arcs	M1 A1	for intersecting arcs of radii 7 cm or an accurate triangle with no arcs for a fully correct triangle with arcs	Allow tolerance of ± 0.2 cm Correct compass arcs must be seen
11	$\frac{178}{320}$	P1 P1 A1	for start to the process eg $320 - 36 (= 284)$ or $320 \div 2 (= 160)$ and $36 \div 2 (= 18)$ for complete process to find number of boys eg “284” $\div 2 + 36$ or “160” + “18” (= 178) for $\frac{178}{320}$ oe	Award full marks if $\frac{178}{320}$ seen but incorrectly cancelled (see general guidance) but 2 marks only if the fraction is converted to a decimal.
12	(a) 164 (b) No (supported)	B1 C2 (C1)	cao for No and complete argument eg $\frac{7}{25} = 28\%$ or 30% of 25 = 7.5 but only 7 students have height greater than 170 cm starts argument eg 7 students or $\frac{7}{25}$ or 30% of 25 = 7.5)	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
13	31 with reasons	B1 M1 C2 (C1)	for $ADB = 62$ for $180 - 62 - 62 - 25$ oe (= 31) or $180 - 25 - 124$ oe (= 31) angle $x = 31$ with all figures correct and all correct reasons appropriate to their method, angles must be clearly labelled or on the diagram base angles of <u>isosceles triangle</u> are equal <u>angles in a triangle</u> add up to 180 <u>angles on a straight line</u> add up to 180 the <u>exterior angle</u> of a triangle is <u>equal</u> to the sum of the <u>interior opposite angles</u> (dep on B1) for at least one reason appropriate to their method)	Full solution must be seen. Angles must be clearly labelled on the diagram or otherwise identified. The key words underlined must be present in the reasons given.
14	370	P1 P1 A1	for $850 - 530$ (= 320) for “320” $\div 2$ (= 160) or “320” $\div 2 \times 3$ oe (= 480) cao	
15	62.5	P1 P1 A1	for $4500 \div 1.2$ (= 3750) or 1.2×60 (= 72) for “3750” $\div 60$ or $4500 \div “72”$ for 62.5, accept 63 or 62 minutes and 30 sec	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
16	60, 32, 28, 24, 8, 14, 14	M1 M1 M1 A1	starts to interpret information eg 60 and 32 in correct place for $32 \div 4 \times 3$ oe (= 24) for $60 - 32$ (= 28) AND "28" $\div 2$ (= 14) completes frequency tree correctly	All frequencies correct but written as probabilities award M3 A0
17	96	P1 P1 A1	for process to work out total number of counters eg 50×4 (= 200) or number of red and yellow counters eg 50×3 (= 150) for process to work out 36% of "150" eg $0.36 \times "150"$ or (100 – 36)% of "150" eg $0.64 \times "150"$ cao	
18 (a)	No and explanation	C1	for No and explanation eg it has increased by 150% or a 250% increase would be 70p	
(b)	Mistake explained	C1	explains mistake eg he did not subtract the reduction from the normal price or he misread 'off' as 'of'	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
19	(a) 0.382(276...)	B2	for 0.382(276...)	
		(B1	for 0.38 or 0.1461...)	
	(b) 0.38	B1	for 0.38 or ft from (a) provided (a) has at least 3 significant figures	
20	$x < 2$	B2	for $x < 2$	Accept $2 > x$
		(B1	for $x ? 2$ where ? is any incorrect inequality sign or =)	
21	(a)(i) 6, 9	B1	cao	
	(ii) Yes (supported)	C1	Yes with supporting evidence eg its the 11th term or $11^2 + 5 = 126$	
	(b) $-7n + 33$	M1	for $-7n$ or $-7n + k$ (where $k \neq 33$ or missing)	
		A1	for $-7n + 33$ oe	Accept eg $T = -7n + 33$ but $n = -7n + 33$ gets M1 A0

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
22	(a) $20 < t \leq 30$	B1	cao	Ignore any histogram drawn and any part of frequency polygon outside range of first and last points plotted
	(b) Points plotted at (5,10), (15,26), (25,23), (35,19), (45,14), (55,8) and joined with line segments	B2 B1	for correct plotting of 6 points and joining with line segments for points plotted at midpoints of intervals or joining points with line segments at the correct heights and consistent within the class interval (including end values) or correct frequency polygon with one point incorrect or correct frequency polygon with first and last points joined)	
23	Paris (supported)	P1 C1	for changing between £ and euros eg $0.58 \times 1.17 (= 0.67(8..))$ or $1.05 \div 1.17 (= 0.89(7..))$ or between pints and litres eg $0.58 \times 1.76 (= 1.02(0..))$ or $1.05 \div 1.76 (= 0.59(6..))$ for a complete process to give values that can be used for comparison eg “0.678...” $\times 1.76 (= 1.19(4..))$ or “0.897...” $\div 1.76 (= 0.50(9..))$ or $0.58 \times 1.76 (= 1.02(0..))$ and $1.05 \div 1.17 (= 0.89(7..))$ or $0.58 \times 1.17 (= 0.67(8..))$ and $1.05 \div 1.76 (= 0.59(6..))$ for correct values that can be used for comparison and a correct comparison of their values	It is acceptable to round or truncate money values throughout eg 0.67 or 0.68 may be used instead of 0.678 Working may be in pounds or pence or euros or cents throughout.

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
24	2	P1 A1 A1	for listing multiples of 15 and 18 with at least 3 numbers in each list, condone one addition error for identifying LCM as 90 (secs) or 1 min 30 (secs) cao	May be seen in list of times eg 0015, 0030, 0045
25	0.28 to 0.283	M1 A1	a complete method, $220 \div (12 \times 65)$ (=0.28205...) for answer in range 0.28 to 0.283	Accept any answer in given range If an answer is given in the range but then incorrectly rounded award full marks.
26	192	P1 P1 P1 P1 A1	for $64 \div (6 + 5 + 5)$ or $24 : 20 : 20$ (dep P1) for correct application of Pythagoras, eg " $20^2 - 12^2$ " for $\sqrt{400 - 144}$ or $\sqrt{256}$ (= 16) for process to find area of triangle, eg " $24 \times 16 \div 2$ " cao	Side lengths of 24, 20 and 20 gets P1
27	(a) -1, 3, 0, -1, 3 (b) Correct graph	B2 (B1) M1 A1	for all correct for 3 or 4 correct) (dep on at least B1 in (a)) for at least 4 points from their table plotted correctly and joined for fully correct graph	Plots the five correct points and joins with a curve (not with straight line segments).

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
28	(a) $15p^6r^5$	B2	for $15p^6r^5$	
		(B1	for two of 15, p^6 , r^5 in a product)	
	(b) $3xy(y - 2x^2)$	B2	for $3xy(y - 2x^2)$	
		(B1	for $3x(y^2 - 2x^2y)$ or $3y(xy - 2x^3)$ or $xy(3y - 6x^2)$ or $3xy$ (a two term algebraic expression))	
29	57.2	M1	recall of appropriate formula eg $\cos x = \frac{5.2}{9.6}$	Accept $\cos = \frac{5.2}{9.6}$ Do not accept $\cos \frac{5.2}{9.6}$ (unless recovered). Accept any answer in given range If an answer is given in the range but then incorrectly rounded award full marks.
		A1	answer in range 57.2 to 57.203	

