Mark Scheme

Mock Paper – Set 1

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

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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 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

Mark scheme GCSE (9 – 1) Mathematics

Mock Paper 1MA1: 3F				
Question		**Working**	**Answer**	**Mark**	**Notes**
1			42 000	1	B1 cao
2			3.05, 3.2, 3.205, 3.25	1	B1 cao
3	(a)		4	1	B1 cao
	(b)		7	2	M1 for (5+6+7+5+3+6+7) – (7+6+6+3+2+4+4) oe or (5–7) + (6–6) + (7–6) + (5–3) + (3–2) + (6–4) + (7–4) oe, allow one error reading from chart A1 cao
4			2.25	3	P1 starts process, e.g. 45 ÷ 2.85 (= 15.7…) P1 for a complete process or digits 225 seen A1 cao

Mock Paper 1MA1: 3F					
Question		**Working**	**Answer**	**Mark**	**Notes**
5	(a)		Pattern	1	C1 correct pattern
	(b)		16	2	M1 evidence of interpretation e.g. further diagrams drawn or numerical sequence etc
					A1 cao
	(c)		No with reason	2	C1 starts argument, e.g. pattern 10 has 22 squares
					C1 No, with complete argument e.g. pattern number 10 has 22 squares and pattern number 20 has 42 squares, not 44 squares
6			explanation	2	M1 identifies two different prime numbers
					C1 explanation e.g. counter example $2 + 7 = 9$
7	(a)		7	1	B1 cao
	(b)		3	2	M1 for listing the numbers in order and identifying the middle two numbers as 3 or answer of 4.5
					A1 cao

Mock Paper 1MA1: 3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
8		237	3	P1 starts process, e.g. $\frac{3}{5} \times 195$ oe (= 117) or $\frac{2}{3} \times (375 - 195)$ oe (= 120) P1 complete process A1 cao
9		92	3	P1 for converting between ml and l or 0.21 or 19500 P1 for "19500" ÷ 210 or 19.5 ÷ "0.21" or 92.8(...) A1 cao
10		6	3	M1 measuring of one of the lines, ± 2mm, and scaling (×2) M1 a complete method, $AB + BC - AC$, scaled or unscaled A1 answer in range 4.8 to 7.2 supported by correct working
11		3 : 2	2	M1 for 78 : 52 oe or 2 : 3 A1 cao

Mock Paper 1MA1: 3F				
Question	Working	Answer	Mark	Notes
12		shown	4	M1 for a method leading to the evaluation of another angle in triangle *ABC*, e.g. *ABC* = 46 or *BAC* = 180 – 113 (= 67)
				A1 *ACB* = 67
				C1 for all appropriate reasons related to method shown, e.g. <u>vertically opposite</u> angles are equal, <u>angles</u> on a straight <u>line</u> add to <u>180º</u>, <u>angles</u> in a <u>triangle</u> add up to <u>180º</u>
				C1 for concluding statement, e.g. *ACB* = *BAC* = 67° and <u>isosceles</u> triangle has two <u>equal</u> <u>angles</u>
13		No with comparison of correct values	3	P1 starts process of comparison, e.g. writes two appropriate fractions or finds a percentage or works out a multiplier
				P1 complete process to give values that can be used for comparison
				A1 No and comparison of correct comparable values (e.g. 80% and 76.7...% **OR** 44.8 (people)
				accept Yes with a suitable argument
14		$y = 2x + 1$ drawn	3	M1 at least 2 correct attempts to find points by substituting or line drawn with gradient of 2 or line drawn with *y* intercept at 1
				M1 at least 2 correct points plotted or line segment of $y = 2x + 1$ drawn
				A1 correct line between $x = -2$ and $x = 3$

Mock Paper 1MA1: 3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
15 (a)		8, 11, 16	2	M1 substitutes 1, 2 or 3 into $n^2 + 7$ A1 cao
(b)		11th	1	B1 for 11th or 11
16		125, 250, 100, 125, 5	3	M1 for $\div 20 \times 50$ oe or $50 \div 20 \; (= 2.5)$ A1 for 2 or 3 correct A1 cao
17 (a)		$2y^3$	1	B1 cao
(b)		$m(m + 1)$	1	B1 cao
(c)		$h = \dfrac{c - 5}{3}$	2	M1 subtracts 5 from both sides or divides each term by 3 as a first step A1 $h = \dfrac{c - 5}{3}$ oe with h the subject

Mock Paper 1MA1: 3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
18		9 30 am	3	P1 lists multiples of 24 and 20 with at least 3 numbers in each list or expansion of 24 and 20 into factors A1 identifies 120 (mins) or 2 (hours) as LCM A1 for 9 30 am oe
19		No with explanation	2	C1 for expansion of $(x + 5)^2$ with at least 3 terms correct or substitution of the same number into both expressions C1 No with $(x + 5)^2 = x^2 + 10x + 25$ or No with correct evaluation of both expressions
20		36.4	4	P1 a strategy to start to solve the problem e.g. $105 \div (5 - 2) (= 35)$ P1 process to find Laura's share e.g. $385 - 2 \times$ "35" $- 5 \times$ "35" $(= 140)$ or $385 \div$ "35" $- 2 - 5 (= 4)$ P1 process to find the percentage Laura gets e.g. "140"$\div 385 \times 100$ oe or "4" $\div 11 \times 100$ oe A1 answer in range 36.3 to 36.4, accept 36%

Mock Paper 1MA1: 3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
21		mistakes identified	2	C1 points joined with curve, not line segments C1 points not plotted at mid-points
22		46	2	M1 links 5% with 2.30 or 100 ÷ 5 (= 20) A1 cao
23		36	3	P1 a correct process to find either an interior or an exterior angle, e.g. $(180 \times 3) \div 5 (= 108)$ or $360 \div 5 (= 72)$ P1 (dep) a complete process to find angle *CFD* A1 cao
24 (a)		34.93	5	P1 process to find area of circle or semicircle $\pi \times 4.2^2 (\div 2)$ P1 process to find area of garden (= 74.7...) P1 process to find number of boxes "74.7" ÷ 12 P1 process to find cost "7" × 4.99 A1 cao
(b)		Correct statement	1	C1 e.g. She might need to buy fewer boxes

Mock Paper 1MA1: 3F				
Question	Working	Answer	Mark	Notes
25 (a)			2	B1 places probs for round, e.g. 4/7 and 3/7 B1 places probs for square, e.g. 3/8, 5/8, 3/8, 5/8
(b)		$\dfrac{15}{56}$	2	M1 ft for "3/7" × "5/8" A1 15/56 oe
26 (a)		3.4×10^8	1	B1
(b)		0.0000183	2	M1 for digits 183... seen or converting one number A1 for answer in range 0.0000183 to 0.000018332
27		30.7	2	M1 recall of appropriate formula, e.g. $\tan x = \dfrac{1.9}{3.2}$ A1 answer in range 30.6 to 30.7