Mark Scheme

Mock Set 2
Pearson Edexcel GCSE Mathematics (1MA1)
Foundation Tier (Calculator)
Paper 2F

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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

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

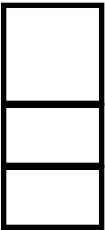| Question	Working	Answer	Mark	Notes
1		300	B1	for 300
2		Any even cube	B1	for any even cube number
3		42	B1	for 42
4		$\dfrac{16}{29}$	P1	process to start, e.g. 29 – 13 (= 16) or $\dfrac{16}{a}$ where a > 16 or $\dfrac{b}{29}$ where b < 29 or $\dfrac{(29-13)}{c}$ where c > 29 – 13
			A1	$\dfrac{16}{29}$ oe
5		AD, AE, AF BD, BE, BF CD, CE, CF	B2 (B1)	for all 9 combinations with no extras or repeats (for at least 6 correct combinations given condone repeats but no more than two incorrect)
6 (a)		$7x - 8y$	M1	for $7x$ or $-8y$
			A1	oe
(b)		$6x - 2x^2$	B1	cao

Question	Working	Answer	Mark	Notes
7			P1	process to start to find cost of coffees, e.g. 10 − 4.61 (= 5.39) **or** 10 − 0.65 (= 9.35)
			P1	complete process to find cost of the coffees 10 − 4.61 − 0.65 (= 4.74)
			P1	complete process to find number of friends ("4.74" ÷ 0.79) **or** ("474" ÷ 79)
			A1	cao
8 (i)		−1	B1	cao
(ii)		explanation	C1	explanation, e.g. by subtracting 3
9		Chart	C1	for key or suitable shading to identify pets or years
			C1	for 3 correct year group labels or a linear scale
			C1	for a bar chart correctly showing data for at least 1 year groups or 2 pets
			C1	for a fully correct bar chart with axes correctly scaled and labelled
10		20	M1	for 500 ÷ 25
			A1	cao
11 (a)		Trapezium	B1	
(b)		Explanation	C1	Explanation, e.g. yes, and could be either rectangle or parallelogram **or** no, and could be rectangle, parallelogram, square or rhombus

Question	Working	Answer	Mark	Notes

12	Table of values $x = -2 -1\ 0\ 1\ 2\ 3\ 4$ $y = -8 -5 -2\ 1\ 4\ 7\ 10$
	
	 OR
	 Using $y = mx + c$, gradient = 3, y intercept = –2
		Line	B3
			
			 (B2)
			
			 (B1)
				for correct line between $x = -2$ and $x = 4$
				
				 OR
				 (for a correct straight line segment through at least 3 of
				    (−2,−8), (−1, −5), (0, −2), (1, 1), (2, 4), (3, 7), (4,10)
				    or for all of these plotted but not joined
				    or for a line drawn with a positive gradient through (0, −2) and
				    clear intention to use a gradient of 3, e.g. line through (0, −2) and (0.5, 1)
				
				 OR
				 (for at least 2 correct points stated or plotted)
				    or for a line drawn with a positive gradient through (0, −2)
				    or a line with gradient 3)

13 (a)		Correct reflection	B2 (B1)	correct reflection – shape at (− 3, 2), (− 3, 5), (− 4, 5),(− 5, 1) (reflection in a different line parallel to $x = -1$ or 3 vertices correct)
(b)		Enlargement, scale factor 2, centre P	B2 (B1)	enlargement, scale factor 2, centre P (for 2 correct aspects) NB score B0 for more than one transformation
14 (i)		Explanation	C1	e.g. has multiplied before squaring
(ii)		Explanation	C1	e.g. evaluated $(–4)^2$ incorrectly, or not correctly inserted brackets.

Question	Working	Answer	Mark	Notes
15 (a)		50g flour 80g syrup 1 egg	P1	process to find the amount of one Ingredient for 60 gingerbread men,, e.g. $350 \times (60 \div 20)$ (= 1050) **or** $10 \times (60 \div 20)$ (= 30) **or** $100 \times (60 \div 20)$ (= 300) **or** $175 \times (60 \div 20)$ (= 525) **or** $60 \times (60 \div 20)$ (= 180) **or** $1 \times (60 \div 20)$ (= 3)
			P1	(dep on P1) for correct processes to find at least 3 ingredients for 60 gingerbread men
			P1	(dep on P2) complete process to find extra amount needed for 3 ingredients,, e.g. 3 of : "1050" − 1000, "30" − 200, "300" − 500, "525" − 600, "180" − 100, "3" − 2
			A1	correct amounts for each ingredient
(b)		Explanation	C1	correct explanation that cannot buy half an egg so have to round up and buy more
16		219.60	M1	180×1.22 oe
			A1	accept 219.6
17 (a)		275.400(96709035)	M1	9.952(38664844) or 53.152(38664844)
			A1	275.400(96709035)
(b)		280	B1	ft provided part (a) is to at least 4 significant figures
18		$\dfrac{4}{5}$	M1	for a method to isolate x terms on one side and number terms to the other side
			A1	oe

Question	Working	Answer	Mark	Notes	
19		51 & 27	M1	$42 \div 14$ (= 3)	
			M1	(dep M1) for "3" × 17 or "3" × 9	
			A1	51 and 27 correctly assigned	
20		$3.45 \leq x < 3.55$	B2	cao	
			(B1)	for 3.45 and 3.55	
21		0.23	P1	for $45 \div 300$ (= 0.15)	for 0.62×300 (= 186)
			P1	(dep P1) for $1 - (0.62 + "0.15")$	(dep P1) for $300 - ("186" + 45)$
			A1	oe	oe
22		11	P1	Process to find total cycling,, e.g. $100 - 52 - 35$ (= 13)	
			P1	Complete process to find female running, e.g. $45 - (30 + ("13" -9))$	
			A1	cao	
				OR	
			P1	process to find male Gym (22) **or** male total (55)	
			P1	complete process to find female running, e.g. $35 - ("55" - "22" - 9)$	
			A1	cao	
				Note: the two-way table (or frequency tree) does not need to be fully complete	

Table for Question 22:

	G	R	C	T
M	**22**	**24**	9	**55**
F	30	**11**	**4**	45
T	52	35	**13**	100

Question	Working	Answer	Mark	Notes
23		39%	P1	process to find proportion of group that are students , e.g. $\frac{15}{16}$
			P1	complete process to find the % of girls , e.g. $\frac{15}{16} \times \frac{5}{12}$
			A1	for 39(.0625)
				OR
			P1	process to scale up the ratio of teachers : students, so that students can be divided by 7+5 (=12),, e.g. 1 × 12 : 15 × 12 = 12 : 180 or a process to divide the "180" in the ratio 7:5,, e.g. 180 ÷ 12 × 7 (=105) **and** 180 ÷ 12 × 5 (=75)
			P1	complete process to find the % of girls , e.g. (75 ÷ (12+105+75)) × 100
			A1	for 39(.0625)
24		construction	B2	correct construction showing all necessary arcs.
			(B1)	(pair of intersecting arcs centred on *A* and *B*)
25 (a)		−1.2 & 3.2	B2	for both roots correct
			(B1)	(for one correct root)
(b)		(1, –5)	B1	cao

Question	Working	Answer	Mark	Notes
26		134	P1	process to find the distance around one or both ends of the track, e.g. $\pi \times 54$ (= 169.6460033) or $(\pi \times 54) \div 2$ (= 84.82300165)
			P1	(dep on P1) complete process to find the total length of the track, e.g. $40 \times 2 +$ "169.6460033" (= 249.6460033)
			P1	process to find the circumference of wheel, e.g. $\pi \times 590$ (=1853.539666 mm) or $\pi \times 0.59$ (= 1.85353966 m)
			P1	complete process to find the number of revolutions in consistent units,, e.g. "249.64…" ÷ "1.85…" or unrounded answer of 134.6860863
			A1	cao
27		Elevation	B2	fully correct side elevation
			(B1)	(a rectangle 4 high by 2 wide)
28 (a)		Shown	M1	for distance ÷ speed to find time, e.g. $(1.496 \times 10^{11}) \div (3 \times 10^8)$ (= 498.666)
			M1	(dep) for conversion to hours, e.g. "498.666" ÷ (60 × 60)
			A1	0.1385185185…
(b)		Explanation	C1	correct explanation, e.g. they have multiplied the indices rather than adding

Question	Working	Answer	Mark	Notes
29		$y = 3x - 1$	M1	for $y = 3x + c$ or a line drawn with gradient 3 passing through A
			A1	oe
30 (a)		$(x + 13)(x - 13)$	B1	cao
(b)		$6x^2 + x - 2$	M1	for all 4 terms (and no additional terms) correct with or without signs or 3 out of no more than 4 terms correct with signs
			A1	$6x^2 + x - 2$