GCSE Mathematics (1MA1) – Aiming for 4 Paper 1F(B) (Set 4)

Spring 2022 student-friendly mark scheme

Please note that this mark scheme is not the one used by examiners for making scripts. It is intended more as a guide to good practice, indicating where marks are given for correct answers. As such, it doesn't show follow-through marks (marks that are awarded despite errors being made) or special cases.

It should also be noted that for many questions, there may be alternative methods of finding correct solutions that are not shown here – they will be covered in the formal mark scheme.

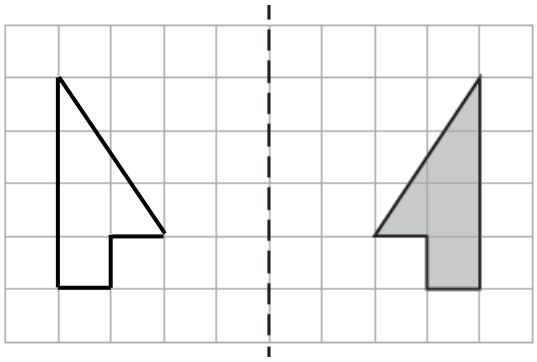
NOTES ON MARKING PRINCIPLES

Guidance on the use of codes within this mark scheme
M1 – method mark. This mark is generally given for an appropriate method in the context of the question. This mark is given for showing your working and may be awarded even if working is incorrect. P1 – process mark. This mark is generally given for setting up an appropriate process to find a solution in the context of the question. A1 – accuracy mark. This mark is generally given for a correct answer following correct working. B1 – working mark. This mark is usually given when working and the answer cannot easily be separated. C1 – communication mark. This mark is given for explaining your answer or giving a conclusion in context supported by your working. Some questions require all working to be shown; in such questions, no marks will be given for an answer with no working (even if it is a correct answer).

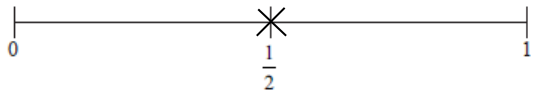
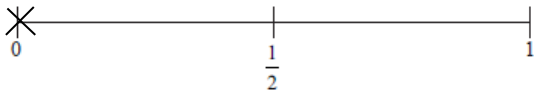
Question 1 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	–10, –7, –2, 0, 1, 8	B1	This mark is given for the correct answer only

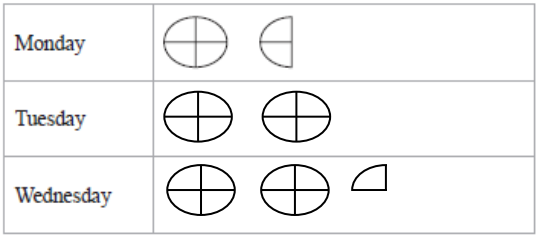
Question 2 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
		M1	This mark is given for a reflection of the shape in any line or a correct reflection of at least 3 vertices
		A1	This mark is given for a fully correct reflection

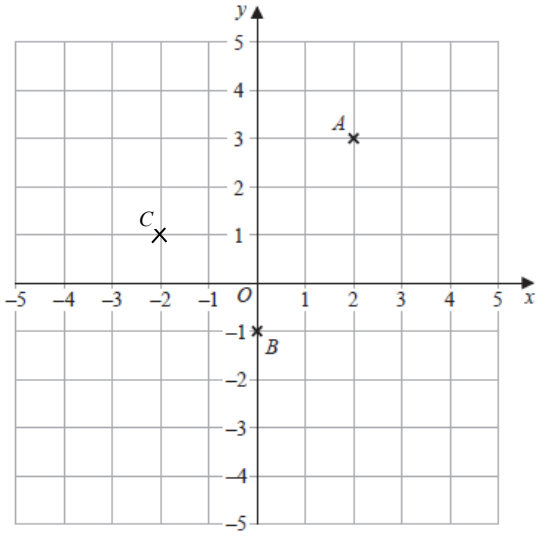
Question 3 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)		B1	This mark is given for the correct answer only
(b)		B1	This mark is given for the correct answer only

Question 4 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
		C1	This mark is given for deducing that each oval represents 12 eggs (may be seen outside diagram) or that each segment represents 3 plates
		C1	This mark is given for 2 ovals drawn for Tuesday
		C1	This mark is given for $2\frac{1}{4}$ ovals drawn for Wednesday
	Key:  represents 12 eggs	C1	This mark is given for a correct key

Question 5 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	(2, 3)	B1	This mark is given for the correct answer only
(b)	(0, –1)	B1	This mark is given for the correct answer only
(c)		B1	This mark is given for *C* marked at (–2, 1)

Question 6 (Total 3 marks)

<table>
<tr><th>Part</th><th>Working or answer an examiner might expect to see</th><th>Mark</th><th>Notes</th></tr>
<tr><td></td><td>
<table>
<tr><th></th><th>Cricket</th><th>Swimming</th><th>Tennis</th><th>Total</th></tr>
<tr><td>Male</td><td></td><td>2</td><td></td><td></td></tr>
<tr><td>Female</td><td></td><td></td><td>11</td><td>20</td></tr>
<tr><td>Total</td><td>5</td><td></td><td></td><td>30</td></tr>
</table>
</td><td>M1</td><td>This mark is given for entering 2, 11 and 5 in the correct places</td></tr>
<tr><td></td><td>
30 – 20 = 10
(10 – 2) ÷ 2 = 4
<table>
<tr><th></th><th>Cricket</th><th>Swimming</th><th>Tennis</th><th>Total</th></tr>
<tr><td>Male</td><td>4</td><td>2</td><td>4</td><td>10</td></tr>
<tr><td>Female</td><td></td><td></td><td>11</td><td>20</td></tr>
<tr><td>Total</td><td>5</td><td></td><td></td><td>30</td></tr>
</table>
</td><td>M1</td><td>This mark is given for a method to complete the top row of the table</td></tr>
<tr><td></td><td>
<table>
<tr><th></th><th>Cricket</th><th>Swimming</th><th>Tennis</th><th>Total</th></tr>
<tr><td>Male</td><td>4</td><td>2</td><td>4</td><td>10</td></tr>
<tr><td>Female</td><td>1</td><td>8</td><td>11</td><td>20</td></tr>
<tr><td>Total</td><td>5</td><td>10</td><td>15</td><td>30</td></tr>
</table>
</td><td>A1</td><td>This mark is given for a fully correct table</td></tr>
</table>

Question 7 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$12 \times \frac{1}{4} = 3$ $12 - 3 = 9$	P1	This mark is given for a process to work out the number of large marbles and small marbles
	$3 \times 70 = 210$ $9 \times 50 = 450$	P1	This mark is given for a process to work out the weight of the large marbles or the small marbles
	$210 + 450$	P1	This mark is given for a process to find the total weight of the marbles
	660	A1	This mark is given for the correct answer only

Question 8 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$7 \times 2 - 3 = 11$	B1	This mark is given for a process to find the cost of three T-shirts
(b)	$x \times 2 - 3 = 41$ $2x - 3 = 41$ $2x = 44$	M1	This mark is given for a process to use an approximation to 0.749
	22	A1	This mark is given for a correct answer only

Question 9 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	0.09	B1	This mark is given for the correct answer only

Question 10 (Total 3 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
(a)	The sequence could be "add one, add two, add three, etc" in which case the next term could be 4 + 3 = 7	C1	This mark is given for a correct explanation
(b)	1, 3, 6, 10, 15, 21, 28…	M1	This mark is given for a method to find the 8th term of the sequence by adding one more each time
	36	A1	This mark is given for the correct answer only

Question 11 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$67.2 \times 10^{-4} = 6.72 \times 10^{-3}$ $672 \times 10^{4} = 6.72 \times 10^{6}$ $0.000672 = 6.72 \times 10^{-4}$	M1	This mark is given for converting each number into standard form
	$0.000672, 67.2 \times 10^{-4}, 6.72 \times 10^{5}, 672 \times 10^{4}$	A1	This mark is given for all numbers in the correct order

Question 12 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$24 \times 50\text{p} = £12$ $£12 - £10 = £2$	M1	This mark is given for a process to find the overall profit
	$\frac{2}{10} \times 100$	M1	This mark is given for a method to find the percentage profit
	20%	A1	This mark is given for the correct answer only

Question 13 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$500 \div 125 = 4$ $4 \times 12 = 48$	P1	This mark is given for a process to find out how many biscuits Heidi could make with 500 g of butter
	$700 \div 200 = 3.5$ $3.5 \times 12 = 42$	P1	This mark is given for a process to find out how many biscuits Heidi could make with 700 g of flour
	$250 \div 50 = 5$ $5 \times 12 = 60$	P1	This mark is given for a process to find out how many biscuits Heidi could make with 50 g of sugar
	Heidi can make 42 biscuits	A1	This mark is given for a correct answer only
(b)	No; Heidi still only has enough flour to make 42 biscuits	C1	This mark is given for a correct conclusion

Question 14 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$x^2 - 4x$	B1	This mark is given for the correct answer only
(b)	$5(3y - 2)$	B1	This mark is given for the correct answer only
(c)	$7f - 35 = 28$ $7f = 63$	M1	This mark is given for a method to expand brackets
	$f = 9$	A1	This mark is given for the correct answer only

Aiming for 4 - Paper 1F(B)					Edexcel averages: mean scores of students who achieved grade						
Qn	**Skill tested**	**Mean score**	**Max score**	**Mean %**	**ALL**	**5**	**4**	**3**	**2**	**1**	**U**
1	Order numbers	0.95	1	95	0.95	0.98	0.98	0.97	0.95	0.89	0.76
2	Transformations	1.86	2	93	1.86	1.95	1.94	1.90	1.80	1.60	1.22
3	Theoretical probability; appropriate language; 0-1 probability scale	1.79	2	90	1.79	1.95	1.92	1.85	1.69	1.44	1.15
4	Pictograms	3.52	4	88	3.52	3.88	3.85	3.70	3.23	2.46	1.75
5	Coordinates in all four quadrants	2.56	3	85	2.56	2.89	2.81	2.64	2.34	1.97	1.55
6	Two way tables	2.37	3	79	2.37	2.78	2.69	2.48	2.09	1.66	1.17
7	Units of mass, length, time, money and other measures (including standard compound measures)	3.10	4	78	3.10	3.89	3.72	3.39	2.48	1.44	0.77
8	Inverse and composite functions; formal function notation	2.22	3	74	2.22	2.75	2.61	2.38	1.87	1.21	0.72
9	Conversion between fractions, decimals and percentages	0.67	1	67	0.67	0.94	0.84	0.73	0.60	0.49	0.36
10	Generate terms of a sequence	1.91	3	64	1.91	2.44	2.25	2.08	1.80	1.36	0.98
11	Standard form	1.07	2	54	1.07	1.52	1.29	1.08	0.91	0.81	0.58
12	Percentages and problems involving percentage change	1.45	3	48	1.45	2.29	1.84	1.49	1.12	0.82	0.47
13	Solve problems involving direct and inverse proportion	2.29	5	46	2.29	3.81	3.24	2.64	1.87	1.23	0.85
14	Expressions and equations	1.72	4	43	1.72	3.54	2.73	1.77	0.90	0.46	0.20
		27.48	**40**	**68**	**27.48**	**35.61**	**32.71**	**29.10**	**23.65**	**17.84**	**12.53**

Aiming for 4 – Set 4 (B) (Spring 2022)

Suggested grade boundaries

	Max	5	4	3	2	1
1F(B)	40	34	31	26	21	15
2F(B)	40	35	31	26	20	13
3F(B)	40	35	32	28	22	14
Total	**120**	**104**	**94**	**80**	**63**	**42**

Grade boundaries are based on the average performance data for students answering these questions who gained grades 1-5 in the November 2020 & 2021 GCSE Mathematics examinations at Foundation tier.

Students did not answer these questions as 45-minute tests, of course; so there is some scope for adjustment. These boundaries are for guidance only.