

GCSE Mathematics (1MA1) – Achieving a Grade 3 3F

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 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$12 - 6x$	B1	This mark is given for the correct answer only
(b)	$3y = 12 \times 4 = 48 \quad y = \frac{48}{3}$	M1	This mark is given for a method to find the value of y
	16	A1	This mark is given for the correct answer only

Question 2 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{15}{3} \times 36 = \text{£}180$	P1	This mark is given for a process to find the cost of 15 rolls from Chic Decor
	$70 \times (15 \div 5) \times 0.12 = \text{£}25.20$	P1	This mark is given for a process to find the discount available at Style Papers
	$(3 \times 70) - 25.20 = \text{£}184.80$	P1	This mark is given for a process to find the cost of 15 rolls from Style Papers
	Jo should buy the wallpaper from Chic Decor	C1	This mark is given for a valid statement relating scale factor to area

Question 3 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	For 25 scones: $2.5 \times 80 = 200\text{g}$ butter	P1	This mark is given for a process to find the amount of at least one ingredient needed for 25 scones
	$2.5 \times 350 = 875\text{g}$ self-raising flour	P1	This mark is given for a process to find the amount of at least three ingredients needed for 25 scones
	$2.5 \times 30 = 75\text{g}$ sugar		
	$2.5 \times 2 = 5$ eggs		
	$200 - 100 = 100\text{g}$ butter	P1	This mark is given for a process to find the extra amounts of the ingredients needed
	1 kg > 875g self-raising flour, so no more required $75 - 50 = 25\text{g}$ sugar $5 - 4 = 1$ egg	C1	This mark is given for a fully correct answer showing the correct amounts of butter, sugar and eggs required

Question 4 (Total 1 mark)

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

Question 5 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(i)	$\begin{pmatrix} 2-1 \\ 3+2 \end{pmatrix} = \begin{pmatrix} 1 \\ 5 \end{pmatrix}$	B1	This mark is given for the correct answer only
(ii)	$\begin{pmatrix} 4 \\ 6 \end{pmatrix} - \begin{pmatrix} 4 \\ 1 \end{pmatrix}$	M1	This mark is given for a method to find the vector $2\mathbf{a}$ before subtracting \mathbf{c}
	$\begin{pmatrix} 0 \\ 5 \end{pmatrix}$	A1	This mark is given for the correct answer only

Question 6 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$400 \times \frac{3}{8} = 150$	P1	This mark is given for a process to find the number of red counters
	$400 - 150 - 82 = 168$	P1	This mark is given for a process to find the number of green counters
	$\frac{168}{400} \times 100 =$	P1	This mark is given for a process to find the number of green counters as a percentage of the total
	42	A1	This mark is given for the correct answer only

Question 7 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	1 kg of carrots = $1.74 \div 3 = 0.58$	P1	This mark is given for a process to find the cost of 1 kg of carrots
	2.5 kg of onions = $2.36 - (2 \times 0.58) = 1.20$	P1	This mark is given for a process to find the cost of 2.5 kg of onions
	1 kg of onions = $1.20 \div 2.5 = 0.48$	P1	This mark is given for a process to find the cost of 1 kg of onions
	4 kg of onions = $4 \times 0.48 = 1.92$	P1	This mark is given for a process to find the cost of 4 kg of onions
	Yes, Stuart has enough money to buy 4 kg of onions	C1	This mark is give for a valid statement supported by correct working

Question 8 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	2500	B1	This mark is given for the correct answer only

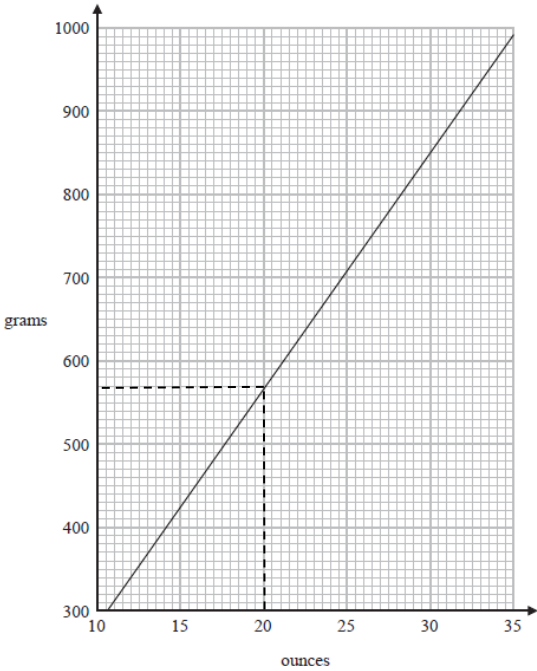
Question 9 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$24 = 3 \times 8$ $56 = 7 \times 8$	M1	This mark is given for a method to find the LCM
	$3 \times 7 \times 8 = 168$	A1	This mark is given for the correct answer only

Question 10 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{20}{5} = 4$	M1	This mark is given for a method to find a ratio of the lengths of the triangles
	$4 \times 4 = 16$	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
(b)	 <p>20 ounces = 570 g 80 ounces = 2280</p>	M1	This mark is given for a method to read off the graph at a factor of 80
		A1	This mark is given for the correct answer in the range 2238 to 2296

1MA1 – Aiming for Grade 3 3F
Edexcel averages: mean scores of students who achieved grade

Qn	Skill tested	Mean score	Max score	Mean %	Edexcel averages: mean scores of students who achieved grade						
					ALL	5	4	3	2	1	U
1a	Expand expressions	0.65	1	65	0.65	0.97	0.89	0.71	0.45	0.19	0.04
1b	Solve linear equations	1.03	2	52	1.03	1.84	1.58	1.09	0.48	0.11	0.02
2	Problems involving percentage change	2.34	4	59	2.34	3.71	3.32	2.55	1.37	0.55	0.14
3	Recipes	2.30	4	57	2.30	3.44	3.04	2.48	1.53	0.62	0.34
4	Rounding	0.56	1	56	0.56	0.72	0.67	0.59	0.45	0.29	0.17
5i	Vectors	0.57	1	57	0.57	0.89	0.77	0.58	0.40	0.25	0.15
5ii	Vectors	0.91	2	46	0.91	1.74	1.43	0.94	0.46	0.20	0.13
6	Problems involving percentage change	2.08	4	52	2.08	3.75	3.26	2.17	0.86	0.20	0.05
7	Apply four operations	2.50	5	50	2.50	4.65	3.91	2.66	1.17	0.38	0.06
8	Rounding;	0.53	1	53	0.53	0.87	0.71	0.52	0.36	0.20	0.07
9	Primes, factors, multiples	1.00	2	50	1.00	1.64	1.34	1.02	0.68	0.31	0.06
10	Similar shapes	0.96	2	48	0.96	1.91	1.54	0.99	0.47	0.15	0.04
11	Graphs of functions in real contexts	0.94	2	47	0.94	1.79	1.45	0.98	0.48	0.18	0.07
		16.37	31.00	52.81	16.37	27.92	23.91	17.28	9.16	3.63	1.34