

GCSE Mathematics (1MA1) – Aiming for 4: Paper 3F

Summer 2019: 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
	1.2	B1	This mark is given for the correct answer only

Question 2 (Total 1 mark)

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

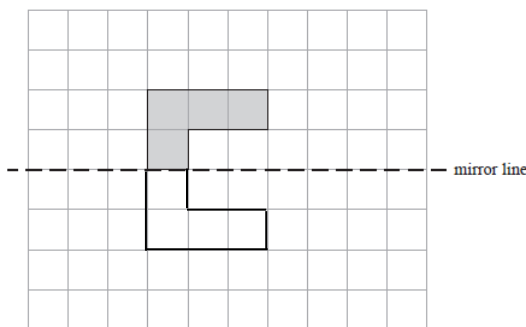
Question 3 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	SP, SR, SB, FP, FR, FB MP, MR, MB	B2	These two marks are given for all 9 combinations given with no extras or repeats (one mark is given for at least 6 correct combinations given)

Question 4 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	Don, Mersey, Trent, Thames, Severn	B1	This mark is given for the correct answer only

Question 5 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
		B1	This mark is given for a correct reflection drawn

Question 6 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$20 \text{ pens costs } £2.38 \times 10 = £23.80$	P1	This mark is given for finding the cost of 20 pens
	$20 \text{ folders cost } £5.60 \times 4 = £22.40$	P1	This mark is given for finding the cost of 20 folders
	$\text{The total cost} = £23.80 + £22.40 = £46.20$	P1	This mark is given for finding the total cost of 20 pens and 20 folders
	Yes, Ben has enough money	C1	This mark is given for the correct conclusion supported by correct working

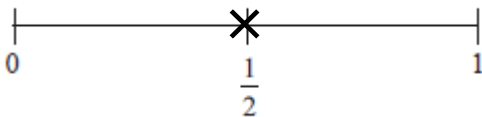
Question 7 (Total 2 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
	$T = (4 \times 2) + 3$	M1	This mark is given for substituting $v = 2$
	11	A1	This mark is given for the correct answer only

Question 8 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$45 \times 1.20 = 54$ $34 \times 1.50 = 51$	P1	This mark is given for a process to work out the money made selling books and candles
	$150 - 54 - 51 = 45$	P1	This mark is given for a process to work out the money made from selling calendars
	$45 \div 0.9$	P1	This mark is given for a process to find out the number of calendars sold
	£50	A1	This mark is given for the correct answer only

Question 9 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	 <p>A horizontal number line with vertical tick marks at 0, $\frac{1}{2}$, and 1. A cross is drawn above the tick mark at $\frac{1}{2}$.</p>	B1	This mark is given for a cross at $\frac{1}{2}$

Question 10 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$720 \div 8 = 90$	B1	This mark is given for the correct answer only

Question 11 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	The numbers must first be put in order	C1	This mark is given for a correct reason

Question 12 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$372 - 36 = 336$ $336 \div 4$	M1	This mark is given for a method to find the cost of each monthly payment
	84	A1	This mark is given for the correct answer only

Question 13 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$1 - 0.2 - 0.4 - 0.1$ $= 0.3$	B1	This mark is given for the correct answer only

Question 14 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	Three times the length of the River Don is $112 \times 3 = 336$ The length of the Thames is 346 (> 336) Ami is correct	C1	This mark is given for a correct comment supported by correct working

Question 15 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$22 - 12$	M1	This mark is given for finding the largest and smaller numbers in the list
	10	A1	This mark is given for the correct answer only
(b)	$\frac{12 + 15 + 14 + 17 + 22 + 19 + 13}{7} = \frac{105}{7}$	M1	This mark is given for adding the numbers and dividing by 7
	16	A1	This mark is given for the correct answer only

Question 16 (Total 1 mark)

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

Question 17 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	12, 4, 2, 1.2, 1	B2	These two marks are given for a fully correct table (one mark is given for 3 values)

Question 18 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$56 \times \frac{3}{4}$	M1	This mark is given for a complete method to find the number of grey tiles
	42	A1	This mark is given for the correct answer only

Question 19 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$14200 \times 1.2 = 17040$	P1	This mark is given for a process to find the cost of the boat with VAT included
	$17040 - 5000 = 12040$	P1	This mark is given for a process to find the amount to be paid after the deposit
	$12040 \div 10$	P1	This mark is given for a process to find the amount of one payment
	1204	A1	This mark is given for the correct answer only

Question 20 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(i)	15	B1	This mark is given for the correct answer only
(ii)	196	B1	This mark is given for the correct answer only

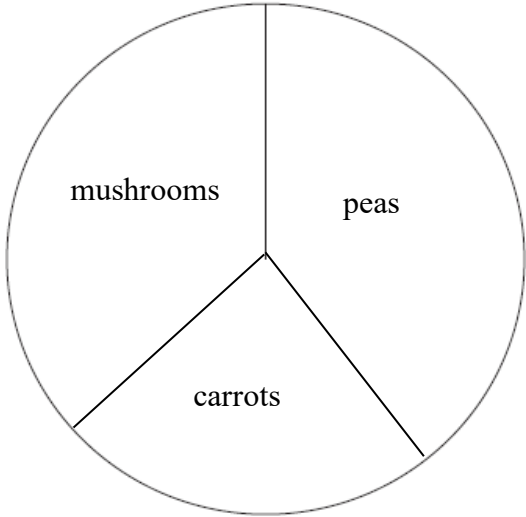
Question 21 (Total 1 mark)

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

Question 22 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{5}{7}$	B1	This mark is given for the correct answer only (or an equivalent fraction)

Question 23 (Total 3 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
	Peas: $24 \times 60 = 144^\circ$ Carrots: $16 \times 60 = 96^\circ$ Peas: $20 \times 60 = 120^\circ$	M1	This mark is given for a method to find the angles to be drawn for each of the sectors in the pie chart
		C1	This mark is given for all three angles calculated correctly
		C1	This mark is given for a fully correct pie chart properly labelled

Question 24 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	450 : 15	M1	This mark is given for writing down an unsimplified ratio
	30 : 1	A1	This mark is given for dividing both sides by 15 for the correct answer

Question 25 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$10x + 6 = 18$ $10x = 12$	M1	This mark is given for a method to find the value of x
	$x = 1.2$	A1	This mark is given for a correct answer only

Question 26 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{2}{6}$ or $\frac{1}{3}$	B1	This mark is given for the correct answer only (or an equivalent fraction)

Question 27 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	Cuboid	B1	This mark is given for the correct answer only
(b)	12	B1	This mark is given for the correct answer only

Question 28 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$3\% = 0.03 = \frac{3}{100}$	B1	This mark is given for the correct answer only

Question 29 (Total 2 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
	$\frac{5.7445626}{532.9}$ = 0.1077981356	B2	These marks are given for the correct answer only (B1 is given for 5.7445626 seen)

Question 30 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$2 + 1:40 + 1:30 + 0:45 + 1:15 = 7:10$ or $2 + 1\frac{2}{3} + 1\frac{1}{2} + \frac{3}{4} + 1\frac{1}{4} = 7\frac{1}{6}$ (hours) or $120 + 100 + 90 + 45 + 75 = 430$ (minutes)	P1	This mark is given for finding the total time for all the tasks, plus breaks
	9 a.m. + 7 hours 10 minutes = 4.10 p.m.	P1	This mark is given for a complete process to inform final decision
	Davos will not finish cleaning by 4 p.m.	C1	This mark is given for a correct conclusion, supported by correct working

Question 31 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	1.88 + 0.06 or 188 + 6	M1	This mark is given for a method to find the height of David
	1.94 m or 194 cm	B1	This mark is given for the correct answer with units shown (m or cm)

Question 32 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	0.2×60	M1	This mark is given for a method to work out an estimate
	12	A1	This mark is given for the correct answer only

Question 33 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	4, 5, 6, 7	B2	These marks are given for all four numbers (B1 is given for 2 or 3 correct values)

Question 34 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$196 \times 14 = 2744$	P1	This mark is given for a process to find the total room cost in dollars
	$5 \times 12 = 60$	P1	This mark is given for a process to find the total wifi cost in dollars
	$2744 + 60 = 2804$ $2804 \div 1.90 = 1475.79$	P1	This mark is given for using the exchange rate appropriately
	$1475.79 + 1500$	P1	This mark is given for a process to find the total cost in £
	2975.79	A1	This mark is given for an answer in the range 2975 to 2976

Question 35 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$420 \times \frac{2}{7} = 120$	P1	This mark is given for a process to find the number of vanilla cakes
	$420 \times \frac{35}{100} = 147$	P1	This mark is given for a process to find the number of banana cakes
	$420 - 120 - 147 = 153$	P1	This mark is given for a full process to find the total number of lemon cakes and chocolate cakes
	$(153 \div 9) = 17$ $17 \times 4 =$	P1	This mark is given for a process to find the number of lemon cakes
	68	A1	This mark is given for the correct answer only

Question 36 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	1 : 3	B1	This mark is given for the correct answer only

Question 37 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(32 \div 4) \times 5$ or $(32 \times 5) \div 4$ $0.8x = 32, x = \frac{32}{0.8}$	M1	This mark is given for a method to set up and solve the problem
	40	A1	This mark is given for the correct answer only

Question 38 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$3 \times 5 = 15$	P1	This mark is given for a process to find out which multiple will have both a star and a circle drawn on
	$100 \div 15 = 6.66\dots$	P1	This mark is given for a process to find out how many cards up to 100 have both a star and a circle drawn on
	6 (whole cards)	A1	This mark is given for the correct answer only

Question 39 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
		M1	This mark is given for plotting at least 6 points from their table correctly
		A1	This mark is given for a fully correct curve

Suggested Grade Boundaries for Aiming for 4: Paper 3F

Grade	5	4	3	2	1
Mark	71	64	53	37	20

For example:

A student aiming for Grade 4 would be expected to score at least 64 marks on this practice paper.