

GCSE Mathematics (1MA1) – Aiming for 4: Paper 2F

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
	$3x = 51$ $x = 17$	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
	42 or 48	B1	This mark is given for the correct answer only

Question 3 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$4 \times 4 \times 4 = 64$ 4	B1	This mark is given for the correct answer only

Question 4 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$3 \times 3 \times 3 \times 3 \times 3 = 243$	B1	This mark is given for the correct answer only (or an equivalent fraction)

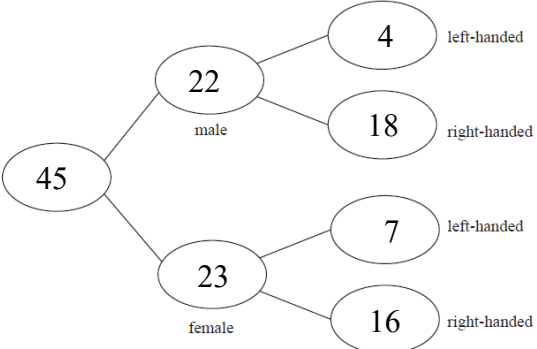
Question 5 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$60 - 27 = 33$	B1	This mark is given for finding the number of students who did not walk to school
	$\frac{33}{60}$	B1	This mark is given for the answer shown or an equivalent fraction

Question 6 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	t^2	B1	This mark is given for the correct answer only
(b)	$15fg$	B1	This mark is given for the correct answer only

Question 7 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
		C1	This mark is given for correctly placing at least one piece of the data given in the question (22 or 16)
		C1	This mark is given for finding at least one unknown piece of data (4, 18, 7 or 23)
		C1	This mark is given for a completely correct probability tree

Question 8 (Total 3 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
	17×46 $266 \div 35$	M1	This mark is given for a method to find comparable amounts
	$17 \times 46 = 782$ $266 \div 35 = 760$	M1	This mark is given for finding comparable amounts
	Ellie's hourly rate is £7.82 which is greater than Reaze's hourly rate of £7.60	A1	This mark is given for showing Ellie's hourly rate is the larger with supporting working

Question 9 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$186 \div 3$	M1	This mark is given for a method to find the average speed
	62	A1	This mark is given for the correct answer only
(b)	58×4	M1	This mark is given for a method to find the total distance driven
	232	A1	This mark is given for the correct answer only

Question 10 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$30 \div 6 = 5$ $30 \div 15 = 2$ $30 \div 10 = 3$	P1	This mark is given for finding the number of sets of pens, pencils and rulers are to be bought
	$5 \times 82 = 410\text{p}$ $2 \times 45 = 90\text{p}$	P1	This mark is given for a process to find cost of 30 pens or 30 pencils or 30 rulers
	$3 \times 1.25 = \text{£}3.75$ $30 \times 37 = 1110\text{p}$	P1	This mark is given for at for a process to find cost of 30 pens, 30 pencils and 30 rulers
	$\text{£}4.10 + \text{£}0.90 + \text{£}3.75 + \text{£}11.10$	P1	This mark is given for a process to find out the total cost
	£19.85	A1	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
	0.07	B1	This mark is given for the correct answer only

Question 12 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{y}{4} \times 4 = 3 \times 4$ $y = 12$	B1	This mark is given for the correct answer only

Question 13 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	5.5 cm	B1	This mark is given for accurately measuring the distance between Backley and Cremford (within the range 5.3cm to 5.7 cm)
	2.75	B1	The mark is given for a correct answer in the range 2.65 to 2.85

Question 14 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$2f = 11$ $f = 5.5$	B1	This mark is given for the correct answer only

Question 15 (Total 3 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
	$4 \times 125 = 500$ or $2 \times 120 = 340$ or $3 \times 135 = 405$	M1	This mark is given for finding the total weight of one type of fruit
	$1785 - (500 + 340 + 405) = 540$	M1	This mark is given for finding the total weight of the oranges
	$540 \div 90 = 6$	A1	This mark is given for the correct answer only

Question 16 (Total 1 mark)

Part	Working an or answer examiner might expect to see	Mark	Notes
	For example 694127	B1	This mark is given for a suitable 6-digit number with 4 as thousands digit

Question 17 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	1, 2, 3, 4, 6, 9, 12, 18, 36 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36	P1	This mark is given for listing at least 4 factors of 36 OR for listing 4 multiples of 3
		P1	This mark is given for listing all the factors of 36 and all multiples of 3 to 36 OR for one correct answer (3 or 9)
	3 and 9	A1	This mark is given for the complete correct answer only

Question 18 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	(MYL) (MLY) (YML) (YLM) (LMY) (LYM)	M1	This mark is given for at least 3 correct combinations
		A1	This mark is given for at fully correct list with no extras or repeats

Question 19 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	The trend is upwards	B1	This mark is given for a correct comment

Question 20 (Total 1 mark)

Part	Working an or answer examiner might expect to see	Mark	Notes
	$m^3 + 4 = m^7$	B1	This mark is given for the correct answer only

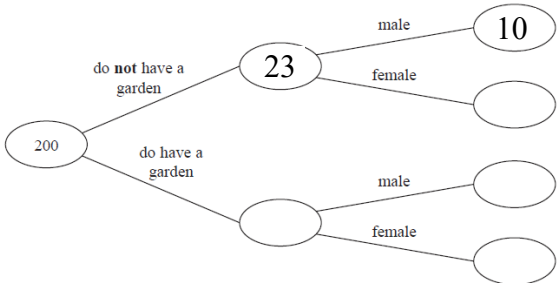
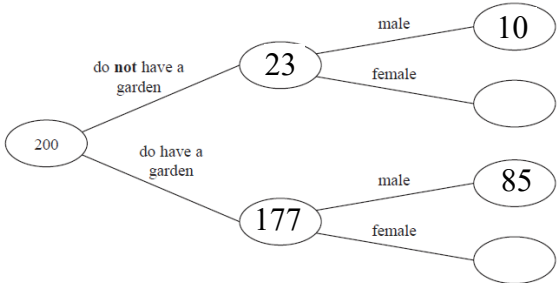
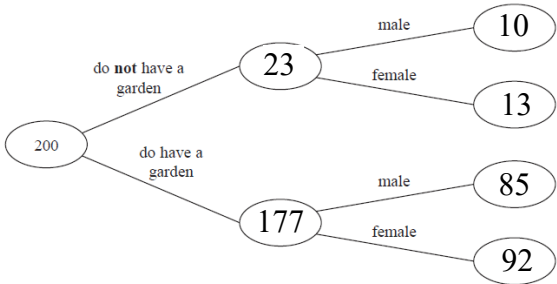
Question 21 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$a = 1, b = 3, \text{ then } 2 \times (1 + 3) = 8$	M1	This mark is given for choosing two odd numbers and working out $2(a + b)$
	$8 \div 4 = 2, \text{ so } 8 \text{ is a multiple of } 4$	C1	This mark is given for a correct statement

Question 22 (Total 1 mark)

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

Question 23 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)		B1	This mark is given for two correct frequencies in the diagram
		B1	This mark is given for 4 correct frequencies in the diagram
		B1	This mark is given for a fully correct frequency tree
(b)		M1	This mark is given for either a numerator of 13 or a denominator of 23
	$\frac{13}{23}$	A1	This mark is given for the correct answer only

Question 24 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(20 \times 7) + (21 \times 3) + (22 \times 1) = 225$	P1	This mark is given for a process to find information about how many buttons there are in the incomplete table
	$320 - 225 = 95$ $95 \div 19$	P1	This mark is given for a complete process to find the missing frequency
	5	A1	This mark is given for the correct answer only

Question 25 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$35 \times 10 = 350$	B1	This mark is given for the correct answer only

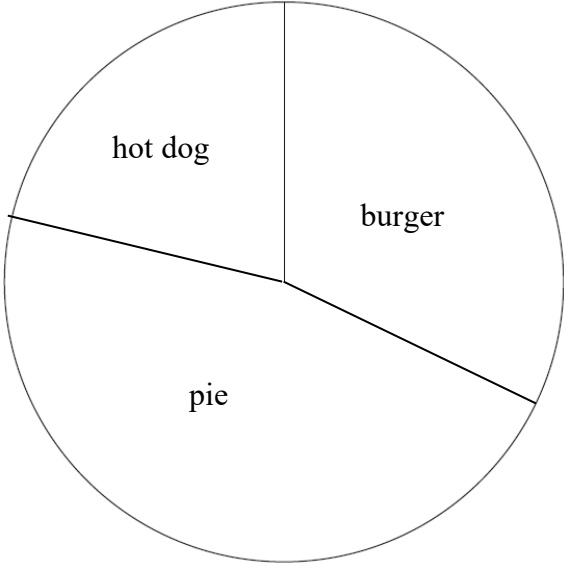
Question 26 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{4}{50} = 0.08$ 8%	B1	This mark is given for the correct answer only

Question 27 (Total 4 marks)

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

Question 28 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	Burger: $360 \div 36 \times 11 = 110^\circ$ Pie: $360 \div 36 \times 17 = 170^\circ$ Hot dog: $360 \div 36 \times 8 = 80^\circ$	M1	This mark is given for method to find at least one angle
		A1	This mark is given for at least one accurately drawn angle (from 3 sectors) or all 3 angles correctly calculated
		A1	This mark is given for a fully correct and labelled pie chart.

Question 29 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$900 \div 225 = 4$ $1000 \div 110 = 9.091$ (to 3 decimal places) $1000 \div 275 = 3.636$ (to 3 decimal places) $225 \div 75 = 3$	P1	This mark is given for a process to find the number of batches for at least three of the ingredients listed
	3×30	P1	This mark is given for a complete process to find the maximum number of cookies
	90	A1	This mark is given for the correct answer only supported by correct working

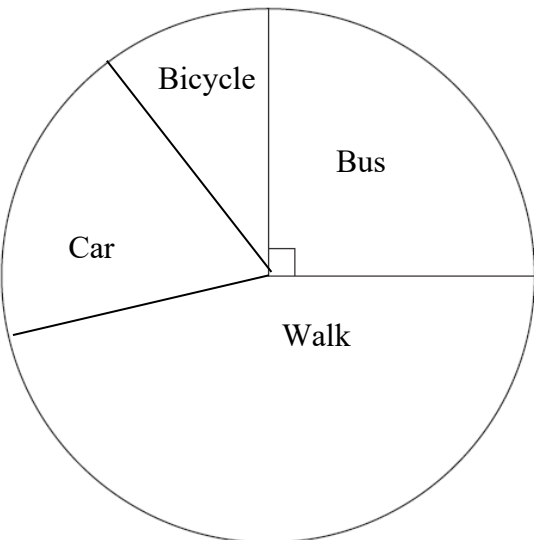
Question 30 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{1}{2}(2n + 4n) = n + 3n = 4n$	B1	This mark is given for the correct answer only

Question 31 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{3}{7}$	B1	This mark is given for the answer shown or an equivalent fraction

Question 32 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{27}{60} \times 360 = 162^\circ,$ $\frac{12}{60} \times 360 = 72^\circ,$ $\frac{6}{60} \times 360 = 36^\circ$	B1	This mark is given for finding the angle for at least one sector
		B1	This mark is given for drawing at least one sector accurately
		B1	This mark is given for an accurately drawn pie chart
		B1	This mark is given for all sectors accurately labelled

Question 33 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$7700 \div 1000 = 7.7$	B1	This mark is given for the correct answer only

Question 34 (Total 1 mark)

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

Question 35 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	23, 29	B2	These marks are given for the numbers 23 and 29 and no extra numbers (B1 is given for at least one correct number and no more than one incorrect number)

Question 36 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(13 \times 5) + 35 = 100$ $25 \times 20 = 100$	M1	This mark is given for finding the total entry fees or the total membership fees
	250 : 100 : 500	M1	This mark is given for finding an unsimplified ratio
	5 : 2 : 10	A1	This mark is given for the correct answer only

Question 37 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	12	B1	This mark is given for the correct area
	cm ²	B1	This mark is given for the correct units
(b)	Kite	B1	This mark is given for the correct answer only

Question 38 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$0.5 \times \pi \times 50 = 78.55$	P1	This mark is given for a process to find the circumference of the semicircle
	$78.55 + 50 = 128.55$	P1	This mark is given for a complete process to find the perimeter of the field
	$128.55 \times 29.86 = 3838.50$	P1	This mark is given for finding the cost of the fencing
	$3838.50 + (180 \times 3)$	P1	This mark is given for a complete method to find the total cost of the job
	4378.50	A1	This mark is given for the correct answer only

Suggested Grade Boundaries for Aiming for 4: Paper 2F

Grade	5	4	3	2	1
Mark	69	62	53	38	23

For example:

A student aiming for Grade 4 would be expected to score at least 62 marks on this practice paper.