

Mark Scheme

AQA Foundation Mock Set A Paper 1

For AQA GCSE Mathematics (8300)

Foundation tier • Paper 1 (Non-Calculator)

Total 80 marks

Key to the marks

M	Method mark: for a correct method that could lead to the correct answer.
A	Accuracy mark: for a correct value or answer that follows from a correct method. The method may be implied.
B	Independent mark: for a correct answer or statement; no method needs to be seen.
Q	Quality mark: for a clear, complete and correct explanation or conclusion.
ft	Follow through: credit correct work that uses a wrong value from an earlier step.
dep	Dependent: can only be given if the mark before it has been given.
SC	Special case: credit for a common misreading that still has some mathematical worth.
oe	Or equivalent: accept any equal value or form, e.g. 0.5 for $\frac{1}{2}$.
cao	Correct answer only.
$[a, b]$	Accept any value from a to b inclusive.
3.14 ...	Accept any answer that begins 3.14, e.g. 3.14, 3.142, 3.1416.
()	Working in brackets does not need to be seen.

Give credit for any correct method, including ones not listed here. A correct answer with no working scores full marks unless the question asks for working (for example “show that” or “you must show your working”). If a correct answer is followed by further work that does not change it, ignore the further work. Probabilities must be written as fractions, decimals or percentages.

Indicative grade boundaries

Grade	5	4	3	2	1
Whole set: Papers 1, 2 and 3 (out of 240)	186	156	115	75	36
This paper alone, rough guide (out of 80)	62	52	38	25	12

Indicative only. Based on the real AQA boundaries for June 2023 to June 2026 (median), adjusted for how this set compares in difficulty with the real papers. Grades are awarded on the total for all three papers; the single-paper guide is about one third of the set boundaries.

These are estimates to help you judge performance on a practice paper; real boundaries change every year.

Marking guidance

Q	Answer	Marks	Guidance
1(a)	800	B1	800 or 8 hundreds oe <i>Additional guidance:</i> Do not accept 8 or hundreds on its own.
1(b)	6.03, 6.083, 6.308, 6.38	B1	6.03, 6.083, 6.308, 6.38 <i>Additional guidance:</i> Do not accept the numbers in reverse order. Accept 6.030 and 6.380
Total for Question 1: 2 marks			
2(a)	154	B1	154
2(b)	3536	B2 (B1)	3536 a correct method with one error, or an answer with three of the four digits correct and in the correct place <i>Additional guidance:</i> 4464 (smaller digit taken from larger in each column) scores B0.
Total for Question 2: 3 marks			
3(a)	3500 grams	B1	3500
3(b)	56 km	M1 A1	35 ÷ 5 or 7 or 35 × 8 or 280 or 35 × 1.6 56 <i>Additional guidance:</i> 21.875 or 21.9 (35 ÷ 1.6) scores MOA0.
Total for Question 3: 3 marks			
4(a)	A row of 9 squares with 1 square on top of the middle one	B1	correct pattern: a row of 9 squares with one square above the 5th square <i>Additional guidance:</i> Condone squares that are not shaded, or drawn slightly off the grid lines, if the intention is clear.
4(b)	18	B1	18
Total for Question 4: 2 marks			
5(a)	48	B1	48
5(b)	23	B1	23
Total for Question 5: 2 marks			
6	3 whole circles and a half circle for Friday	M1 M1dep A1	any two of 12, 10, 17, 7 (may be seen on the pictogram) 60 – (12 + 10 + 17 + 7) or 46 seen or 14 seen 3 whole symbols and a half symbol drawn for Friday

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Condone symbols that are not perfect circles if the intention is clear. A1ft for their (60 – their 46) drawn correctly as symbols, if M1M1 scored and their value is a whole number. 14 stated but not drawn scores M1M1A0.
7	1	B1	1
8	£3.90	M1 M1dep M1 A1	2 × 12.80 or 25.6(0) or 3 × 8.50 or 25.5(0) 25.6(0) + 25.5(0) or 51.1(0) 50 – (their 51.10 – 5) or their 46.10 subtracted from 50 3.90 <i>Additional guidance:</i> Accept working in pence throughout. 1.10 or –1.10 (voucher not used: 51.10 – 50) scores M1M1M0A0. Condone £3.90p
9(a)	45%	B1	45
9(b)	51	M1 A1	34 and 17 or 340 × 15 ÷ 100 oe or 0.15 × 340 or 3.4 seen 51
Total for Question 9: 3 marks			
10(a)	He added 5 and 2 instead of multiplying them (the answer should be 10pq)	B1	states that he added 5 and 2 (instead of multiplying) or states the answer should be 10pq oe <i>Additional guidance:</i> Accept e.g. “he did 5 + 2 not 5 × 2”, “it should be 10pq”, “the 7 should be 10”. Do not accept “he got the letters wrong” or “he should have added”.
10(b)	2x + 15	M1 A1	6x + 15 or 6x + k or ax + 15 (a ≠ 0) 2x + 15 <i>Additional guidance:</i> Do not ignore further work: 2x + 15 followed by an incorrect simplification, e.g. 17x, scores M1A0.
Total for Question 10: 3 marks			
11	Northfield, because $\frac{5}{8} = \frac{25}{40}$ and $\frac{3}{5} = \frac{24}{40}$	M1 A1	$\frac{5}{8}$ and $\frac{3}{5}$ in a comparable form, e.g. $\frac{25}{40}$ and $\frac{24}{40}$, or 0.625 and 0.6, or 62.5% and 60% Northfield ticked with correct values

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Northfield ticked with no working or incorrect working scores M0A0. Accept $\frac{15}{24}$ and $\frac{15}{25}$ (same numerators) as comparable.
12(a)	Arrow at 0.3	B1	arrow at 0.3 <i>Additional guidance:</i> Accept a cross or other clear mark at 0.3
12(b)	2	M1	7 (red or yellow counters now) or $14 \div 2$ or $9 - n = 5 + n$ oe
		A1	2 <i>Additional guidance:</i> 7 as the final answer scores M1A0. 4 (the difference $9 - 5$) scores M0A0. Trials: e.g. 7 and 7 seen scores M1.
Total for Question 12: 3 marks			
13	Always true; Sometimes true; Never true	B3	Always, Sometimes, Never
		(B2)	two rows correct
		(B1)	one row correct <i>Additional guidance:</i> A row with more than one tick is incorrect for that row.
14	£135	M1	$75 \div (7 - 2)$ or $75 \div 5$ or 15
		M1dep	9×15 or 30 and 105
		A1	135 <i>Additional guidance:</i> $75 \div 9 \times 7$ or similar (treating 75 as the total) scores M0A0. 30 and 105 with no answer, or with answer 30 or 105, scores M1M1A0. Trial and improvement leading to 135 scores full marks.
15	Yes: $x = 38^\circ$ and $y = 114^\circ = 3 \times 38^\circ$	M1	$x = 38$ or 66 seen as the third angle of the triangle or as the alternate angle at the top right
		M1	$y = 114$ or $180 - 66$ or $38 + 76$
		A1	Yes with $x = 38$, $y = 114$ and $3 \times 38 = 114$ or $114 \div 3 = 38$ seen <i>Additional guidance:</i> Angles may be marked on the diagram. Reasons are not required. Yes with no working scores 0.
16	$x = 11$	M1	$5x - 20$

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Q	Answer	Marks	Guidance
		M1	collecting terms correctly from their expansion, e.g. $5x - 2x = 13 + 20$ or $3x = 33$
		A1	11 <i>Additional guidance:</i> Accept $\frac{33}{3}$. 11 from trial and improvement with no errors scores 3.
17	Triangle with vertices $(-4, 1)$, $(-1, 1)$ and $(-1, 3)$	B2	triangle with vertices $(-4, 1)$, $(-1, 1)$, $(-1, 3)$
		(B1)	triangle the same size and orientation, translated 5 left or 4 up <i>Additional guidance:</i> Ignore labelling. B1 for a translation by $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$ (components reversed).
18(a)	800	M1	80, 4 and 0.4 seen
		M1	$320 \div 0.4$ or $3200 \div 4$ or 80×10 or $4 \div 0.4$ or 10
		A1	800 <i>Additional guidance:</i> Answer 800 with no working scores 0. Rounding to other than 1 sf scores M0, but the second M1 may be awarded for a correct division method with their values.
18(b)	Underestimate: the numbers on the top were rounded down and the number on the bottom was rounded up	B1	Underestimate with a reason that refers to the numerator being rounded down and the denominator being rounded up <i>Additional guidance:</i> Do not accept “all the numbers were rounded down” or “because I rounded”. Allow ft from their rounding in part (a).
Total for Question 18: 4 marks			
19	12	M1	45 or $45 \div 5$ or 9
		M1	5×11 or 55 or 5×2 or 10 (increase in total)
		A1	12 <i>Additional guidance:</i> 20 (22 – 2) scores M0M0A0. 12 with no working scores 0 (the question says you must show your working). Trialling: replacing one card with 22 and correctly working out the new mean, e.g. $(7 + 22 + 9 + 3 + 14) \div 5 = 11$, scores M1M1; then 12 identified scores A1.

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Q	Answer	Marks	Guidance
20	No (back at 4:15 pm)	M1	2×14 or 28 or $14 \div 6$ or $2\frac{1}{3}$ (hours) or 2 hours 20 minutes or 140 minutes
		M1	$28 \div 6$ or $4\frac{2}{3}$ (hours) or 4 hours 40 minutes or 280 minutes
		M1	their travelling time for 28 km + 1 hour 20 minutes or 6 hours or 360 minutes
		M1	10:15 + their total time or 4:15 pm or 16:15 or their total time compared with 5 hours 45 minutes (345 minutes)
		A1	No with 4:15 pm or No with 15 minutes late or No with 6 hours and 5 hours 45 minutes <i>Additional guidance:</i> Alternative method: 5 hours 45 minutes or 345 minutes available M1; $345 - 80$ or 265 minutes (4 hours 25 minutes) for travelling M1; $6 \times 265 \div 60$ or 26.5 km M1; 28 km needed M1; No with 26.5 and 28 A1. One way only: $14 \div 6$, 2 hours 20 minutes, + 1 hour 20 minutes, back at 1:55 pm, Yes, scores M1MOMOM1A0. Changing 4.6(6...) hours to 4 hours 6 minutes, 4 hours 66 minutes or 4 hours 67 minutes is M0 for the second mark; the third and fourth marks may still be awarded for their time. A tick with no working, or with working that does not support it, scores 0.
21	6.9 m ²	M1	3×2 or 6
		M1	$\frac{1}{2} \times 3 \times (2.6 - 2)$ or 0.9
		A1	6.9
			<i>Additional guidance:</i> Alternative method (trapezium): $\frac{1}{2} \times (2.6 + 2) \times 3$ scores M2; 6.9 scores A1. Alternative: $3 \times 2.6 - \frac{1}{2} \times 3 \times 0.6$ scores M2. 7.8 (3×2.6) scores M0A0.
22	$5\frac{7}{12}$	M1	$\frac{5}{6}$ and $\frac{3}{4}$ (or $\frac{23}{6}$ and $\frac{7}{4}$) written with a common denominator, e.g. $\frac{10}{12}$ and $\frac{9}{12}$, or $\frac{46}{12}$ and $\frac{21}{12}$
		M1dep	$\frac{67}{12}$ or $4\frac{19}{12}$ oe
		A1	$5\frac{7}{12}$ <i>Additional guidance:</i> $\frac{67}{12}$ as final answer scores M1M1A0. Common denominator 24: $\frac{20}{24} + \frac{18}{24}$ scores M1; $5\frac{14}{24}$ scores M1M1A0 (must be simplified).

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Q	Answer	Marks	Guidance
23(a)	Straight line from $(-1, 7)$ to $(3, -5)$	B3	correct straight line from $(-1, 7)$ to $(3, -5)$
		(B2)	at least 3 correct points plotted or a correct line of any length through at least 3 correct points
		(B1)	2 correct points plotted or at least 2 correct values in a table
			<i>Additional guidance:</i> Points: $(-1, 7)$, $(0, 4)$, $(1, 1)$, $(2, -2)$, $(3, -5)$. Condone a line drawn beyond $x = -1$ to $x = 3$. Tolerance: within half a small square.
23(b)	$k = 5$	B1	5
Total for Question 23: 4 marks			
24	$\frac{1}{25}$	M1	5^7 or 5^{-2} or 5^{3+4-9} or $\frac{1}{5^2}$
		A1	$\frac{1}{25}$ <i>Additional guidance:</i> 5^{-2} or $\frac{1}{5^2}$ as the final answer scores M1A0. -25 or -10 scores M1A0 if 5^{-2} seen. 0.04 scores M1A0 (the question asks for a fraction).
25	1	B1	1
26(a)	Missing values: 4, 8, 3, 9, 10, 15	B2	all 6 missing values correct: 4, 8 (row 2); 3, 9 (row 3); 10, 15 (row 5)
		(B1)	at least 4 missing values correct
26(b)	No (4 odd scores and 4 even scores greater than 6)	M1	4 odd scores identified or 4 even scores greater than 6 identified or $\frac{4}{12}$ oe for either
		A1ft	No with 4 and 4 or No with $\frac{4}{12}$ and $\frac{4}{12}$ oe <i>Additional guidance:</i> ft their table if B1 scored in part (a), with a correct conclusion from their counts. No with “it’s the same chance” but no counts or probabilities scores MOA0. No with a reason only about the spinners (e.g. “it is random”) scores MOA0.
Total for Question 26: 4 marks			
27(a)	0.00406	B1	0.00406
27(b)	5.6×10^2 grams	M1	$7 \times 10^3 \times 8 \times 10^{-2}$ or 56×10^1 or 560 or 5.6×10^k
		A1	5.6×10^2

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> 560 as the final answer scores M1A0 (not in standard form). 5.6×10^6 (from $10^3 \times 10^2$) or 5.6×10^{-5} (powers multiplied) scores M1A0. Dividing one number by the other scores MOA0.
Total for Question 27: 3 marks			
28(a)	$(x + 7)(x - 4)$	B2 (B1)	$(x + 7)(x - 4)$ $(x + a)(x + b)$ where $ab = -28$ or $a + b = 3$ <i>Additional guidance:</i> Brackets in either order.
28(b)	$x = -7$ or $x = 4$	B1ft	-7 and 4 <i>Additional guidance:</i> ft their factorisation in part (a), if it is of the form $(x + a)(x + b)$. Both values needed.
Total for Question 28: 3 marks			