

Mark Scheme

AQA Foundation Mock Set A Paper 3

For AQA GCSE Mathematics (8300)

Foundation tier • Paper 3 (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)	6800	B1	cao
1(b)	1.3 km	B1	cao
1(c)	24 000	B1	cao <i>Additional guidance:</i> 24 or 240 or 23 000 scores B0
Total for Question 1: 3 marks			
2(a)	215	B1	cao
2(b)	$\frac{21}{25}$	B1	$\frac{21}{25}$ <i>Additional guidance:</i> $\frac{84}{100}$ or $\frac{42}{50}$ scores B0
Total for Question 2: 2 marks			
3	10.324	M1 A1	13.824 or 3.5 seen 10.324 <i>Additional guidance:</i> 13.824 – 3.5 implies M1. 7.2 – 3.5 = 3.7 (from 2.4×3) scores M1A0 only if 3.5 is seen.
4(a)	$y = 56$	B1	cao
4(b)	$w = 8$	M1 A1	$6w = 37 + 11$ or $6w = 48$ or $(37 + 11) \div 6$ oe 8
Total for Question 4: 3 marks			
5(a)	450 g	M1 A1	$270 \div 12$ or 22.5 or $270 \div 3$ or 90 oe 450 <i>Additional guidance:</i> Other correct build-up methods score M1, e.g. $270 + 90 + 90$ ($12 + 4 + 4$ muffins)
5(b)	33	M1 A1	$500 \div (180 \div 12)$ or $500 \div 15$ or 33.3(...) oe 33 <i>Additional guidance:</i> 34 scores M1A0 if 33.3(...) seen. 24 (whole batches of 12 only) scores M0A0
Total for Question 5: 4 marks			
6(a)	BC, BS, BO, WC, WS, WO, JC, JS, JO	B2 (B1)	all 9 correct with no extras (ignore repeats) at least 5 correct <i>Additional guidance:</i> BC may be written again. Accept words or other clear notation. Accept either order, e.g. CB for BC.
6(b)	$\frac{3}{9}$ or $\frac{1}{3}$	B1ft	$\frac{3}{9}$ oe

(continued)

Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> ft their list in (a) with at least 6 combinations
Total for Question 6: 3 marks			
7	£223.31	M1	$(24\,968 - 24\,318) \times 26$ or 16 900 or 169
		M1	91×48 or 4368 or 43.68
		M1dep	their 212.68×1.05 oe or their 212.68×0.05 and added dep on at least M1
		A1	223.31 accept 223.3(1...) <i>Additional guidance:</i> $212.68 \times 0.05 = 10.634$ is not the answer: it must be added. 22 331 (pence not changed to pounds) on the £ answer line scores M3A0
8	Image with vertices $(-1, 2)$, $(-1, 5)$, $(-3, 2)$	B2	correct image, vertices $(-1, 2)$, $(-1, 5)$, $(-3, 2)$
		(B1)	two vertices correct, or reflection in $y = -x$ <i>Additional guidance:</i> Mark intention.
9(a)	Positive	B1	positive <i>Additional guidance:</i> Ignore strong/weak. Do not accept a description of the relationship alone, e.g. “more sun, more visitors”
9(b)	About 225 (accept 205 to 245)	B1	single ruled line of best fit between $(1, 40)$ and $(1, 80)$ and between $(11, 300)$ and $(11, 340)$
		B1ft	$[205, 245]$ ft their line at 7.5 hours (to within one small square) <i>Additional guidance:</i> An answer in $[205, 245]$ with no line drawn scores B0B1
9(c)	16 hours is outside the range of the data (it only goes up to 11 hours).	B1	valid reason, e.g. 16 is outside the range of the data or the data only goes up to 11 hours or the pattern may not continue <i>Additional guidance:</i> Do not accept “the line does not go that far” alone. Accept “the lido may be full” oe.
Total for Question 9: 4 marks			
10(a)	€290	B1	290
10(b)	\$158.75	M1	$145 \div 1.16$ or 125
		M1dep	their 125×1.27 or $145 \times 1.27 \div 1.16$ oe
		A1	158.75 accept 158.7(...) or 158.8(0)

(continued)

Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> $145 \times 1.27 = 184.15$ (ignores the euro rate) scores M0M0A0. $145 \times 1.16 \times 1.27 = 213.6(\dots)$ scores M0M0A0. $145 \div 1.27 \times 1.16 = 132.4(\dots)$ scores M0M0A0. Alternative: $1.27 \div 1.16 = 1.0948 \dots$ and $\times 145$ scores M1M1A1 for 158.75
Total for Question 10: 4 marks			
11(a)	3: 8	M1 A1	45:120 oe or 0.75:2 oe 3: 8 <i>Additional guidance:</i> 8:3 scores M1A0. 45:2 scores M0
11(b)	Yes. $5:17 = 1:3.4$, and $3.4 > 3$	B1	Yes with $1:3.4$ or $17 \div 5 = 3.4$ oe or $3 \times 5 = 15$ and $17 > 15$ oe <i>Additional guidance:</i> Yes with no reason, or with “17 is bigger than 5”, scores B0
Total for Question 11: 3 marks			
12(a)	He added before multiplying: he should work out -3.2×2.5 first.	B1	correct explanation, e.g. he added before multiplying or he should have done -3.2×2.5 first or he worked out $(u + a) \times t$ <i>Additional guidance:</i> Do not accept “he did it in the wrong order” with no detail. Do not accept “the answer is wrong” or a new answer with no explanation
12(b)	$v = 4.5$	B1	4.5 <i>Additional guidance:</i> 20.5 (from $12.5 + 8$) scores B0
Total for Question 12: 2 marks			
13(a)	Year 10: 24, 19, 21, 64; Year 11: 14, 30, 32, 76; Totals: 38, 49, 53, 140	B3 (B2) (B1)	fully correct table at least 6 correct new entries at least 3 correct new entries, or 24 in the correct cell <i>Additional guidance:</i> New entries are: 24, 19, 64, 14, 32, 76, 38, 49, 53
13(b)	No. $P(\text{Coding}) = \frac{49}{140} = 0.35$, not $\frac{1}{3}$	M1	$\frac{49}{140}$ oe ft their Coding total

(continued)

Q	Answer	Marks	Guidance
		A1ft	No with $\frac{49}{140}$ oe and a correct comparison with $\frac{1}{3}$, e.g. 0.35 and 0.33 or 49 and 46.6(...) or the clubs are not equally likely <i>Additional guidance:</i> Ticking No with no working scores M0A0. Alternative: $\frac{1}{3}$ of 140 = 46.6(...) compared with 49 scores M1A1. ft their Coding total from part (a)
Total for Question 13: 5 marks			
14	129	M1	27 ÷ 45 or 0.6 or 360 ÷ 45 or 8 or 216 oe
		M1dep	(135 + 80) × 0.6 or 81 and 48 or $\frac{215}{360} \times 216$ oe
		A1	129 <i>Additional guidance:</i> 81 (car only) or 48 (train only) as the answer scores M1M0A0. 215 as the answer scores M0M0A0
15	£323.68	M1	420 ÷ 30 and 360 ÷ 30 or 14 and 12 or 4.2 × 3.6 or 15.12 and 0.3 × 0.3 or 0.09
		M1	168 tiles
		M1	their 168 ÷ 10 rounded up, e.g. 17 boxes
		M1	their 17 × 22.40 × 0.85 oe or their 380.80 × 0.15 and subtracted
		A1	323.68 <i>Additional guidance:</i> 16.8 boxes used gives 319.87(...): M1M1M0M1A0. No discount (380.80): M1M1M1M0A0. Discount applied to 16 boxes (304.64) scores M1M1M0M1A0
16(a)	2.5 km	B1	[9.8, 10.2] (cm) seen
		M1	their 10 × 25 000 or 250 000
		A1ft	2.5 ft their measurement ÷ 4 correctly evaluated <i>Additional guidance:</i> Accept [2.45, 2.55] from an accurate measurement. 250 000 (cm) or 2500 (m) as the final answer scores B1M1A0
16(b)	North-West	B1	North-West or NW <i>Additional guidance:</i> Do not accept West-North
Total for Question 16: 4 marks			
17	68 850 cm ³ = 0.068 85 m ³ , which is less than 0.07 m ³	M1	$\frac{1}{2} \times (35 + 50) \times 18$ or 765 or $\frac{1}{2} \times (0.35 + 0.5) \times 0.18$ or 0.0765 oe
		M1dep	their 765 × 90 or 68 850 or their 0.0765 × 0.9

(continued)

Q	Answer	Marks	Guidance
		M1	their $68\,850 \div 1\,000\,000$ or $0.07 \times 1\,000\,000$ or $70\,000$ or all lengths in m
		A1	$0.068\,85$ and < 0.07 or $68\,850$ and $70\,000$ and $<$ with a correct conclusion <i>Additional guidance:</i> $68\,850 \div 100 = 688.5$ or $\div 10\,000 = 6.885$ scores M1M1M0A0. $35 \times 50 \times 18 \times 90$ scores M0 for the first mark but can score the conversion M1. The conclusion may be a statement, e.g. " $0.06885 < 0.07$ "
18	8 glasses, $\frac{1}{12}$ litre left over	M1	$2\frac{3}{4} \div \frac{1}{3}$ oe or $8\frac{1}{4}$ or 8.25 or $\frac{33}{4}$
		A1	8 (glasses)
		M1	$2\frac{3}{4} - 8 \times \frac{1}{3}$ oe or $\frac{1}{4} \times \frac{1}{3}$ oe or $0.08(3\dots)$
		A1	$\frac{1}{12}$ <i>Additional guidance:</i> $\frac{1}{4}$ (litre) left over scores M1A1M0A0. Repeated subtraction of $\frac{1}{3}$ leading to 8 scores M1A1
19	54	M1	$45 \div 5$ or 9 or 36
		M1dep	$36 + 45$ or 81
		M1dep	their $81 \div 3$ or 27 or their $81 \div \frac{3}{5}$ or 135
		A1	54 <i>Additional guidance:</i> $\frac{2}{5} \times 81 = 32.4$ scores M1M1M0A0. Total 135 seen implies M1M1M1
20(a)	Point at (2024, 95) plotted and joined to (2023, 85)	B1	point plotted at (2024, 95) $\pm$ half a small square
		B1ft	ruled line from (2023, 85) to their point <i>Additional guidance:</i> ft their point for the second B1 if it is above 2024
20(b)	The number of members increased.	B1	increasing oe <i>Additional guidance:</i> Accept "going up" oe. Do not accept a description of the fall from 2019 to 2020 only
			Total for Question 20: 3 marks
21	1875 N/m^2	M1	1.2×0.8 or 0.96
		A1	1875

(continued)

Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> $1800 \div (1.2 \times 0.8 \times 0.9) = 2083.(\dots)$ scores M0A0. $1800 \div 1.08$ or $1800 \div 0.72$ (other faces) scores M0A0
22	$x = 4, y = -1$	M1 A1 A1	correct method to eliminate one variable, e.g. $4x = 16$ allow one error $x = 4$ or $y = -1$ $x = 4$ and $y = -1$ <i>Additional guidance:</i> Correct answers with no working score 3 marks. Trial and improvement scores 3 for both correct, otherwise 0
23	3.15 pm (15:15)	M1 M1dep M1dep A1	5×12 or 60 or $\frac{2}{12}$ oe of the field done their $60 - 5 \times 2$ or 50 or $\frac{10}{12}$ oe of the field left their $50 \div 8$ or 6.25 or 6 h 15 min or $\frac{10}{12} \div \frac{8}{60}$ oe 3.15 pm or 15:15 or quarter past 3 in the afternoon <i>Additional guidance:</i> 3.25 pm (from 6.25 h = 6 h 25 min) scores M1M1M1A0. $60 \div 8 = 7.5$ h used for the whole field (2.30 pm or 4.30 pm) scores M1MOM0A0. 6 h 15 min (or 6.25 h) as the final answer scores M1M1M1A0. Accept 3:15 pm or 3.15 if pm is clear from working
24	9	M1 M1dep A1	$-5 - 2$ or $b + 2 = -5$ -7 (2nd term) or $2 - (-7)$ or $a +$ their $(-7) = 2$ 9 <i>Additional guidance:</i> -3 (from $-5 + 2$) as 2nd term scores M0, then $2 - (-3) = 5$ scores MOM1A0 if the method is clear. 9, $-7, 2, -5$ written as the sequence with 9 not stated scores M1M1A1