

Mark Scheme

Edexcel Foundation Mock Set B Paper 3

For Pearson Edexcel GCSE Mathematics (1MA1)

Foundation tier • Paper 3 (Calculator)

Total 80 marks

Key to the marks

M	Method mark: for a correct method or a correct part of a method.
P	Process mark: for a correct step in the process of solving a problem.
A	Accuracy mark: for a correct answer or value after a correct method or process.
B	Unconditional accuracy mark: no method needs to be seen.
C	Communication mark: for a fully correct statement or conclusion with no contradiction.
()	A mark in brackets, e.g. (B1), is an alternative partial mark when full marks are not given.
oe	Or equivalent.
cao	Correct answer only.
ft	Follow through from an earlier answer.
isw	Ignore subsequent working once the correct answer is seen.
awrt	Answer which rounds to.
sc	Special case.
dep	Dependent on the mark before it.
“ ”	A value in quotation marks, e.g. “12” $\times$ 5, must come from a correct method, but may contain an arithmetic slip.

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)	180	148	109	70	31
This paper alone, rough guide (out of 80)	60	49	36	23	10

Indicative only. Based on the real Pearson Edexcel 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	34%	B1	cao
2	5	B1	cao
3	6 hundredths $\left(\frac{6}{100} = 0.06\right)$	B1	6 hundredths oe <i>Additional guidance:</i> Accept $\frac{6}{100}$ or 0.06. Do not accept “hundredths” or 6 on its own.
4	2.7	B1	cao
5	Triangular prism	B1	triangular prism <i>Additional guidance:</i> Do not accept “prism” on its own or “triangle”.
6(a)	Two lines: one vertical and one horizontal, through the centre of the shape	B1	both lines of symmetry drawn and no incorrect lines <i>Additional guidance:</i> Lines must be straight and pass through the centre of the shape. Ignore lines that only cover part of the shape if their position is clear.
6(b)	2	B1	cao
Total for Question 6: 2 marks			
7(a)	4 houses joined in a row (21 sticks)	B1	for a correct drawing of Pattern number 4 <i>Additional guidance:</i> Sticks do not need to be drawn accurately. The roofs must be shown.
7(b)	21 and 26	B1	for 21 and 26
7(c)	No. Pattern number 10 has $5 \times 10 + 1 = 51$ sticks	C1	for No with a correct reason, e.g. Pattern 10 has 51 sticks, or the patterns go up by 5 each time so $16 + 7 \times 5 = 51$ <i>Additional guidance:</i> Accept “No” with a correct continuation of the sequence to 51. “No” with no reason scores C0.
Total for Question 7: 3 marks			
8	No. She arrives at 12 15, but she needs to arrive by 12 05	P1 P1	for a process to add the times, e.g. $145 + 25 + 15 (= 185)$, or for adding at least two of the times to 09 10, or for $13\ 05 - 1\ \text{hour} (= 12\ 05)$ for a complete process to find the arrival time 12 15 and the latest time 12 05, or to compare the journey time 185 minutes with the time available 175 minutes

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Q	Answer	Marks	Guidance
		C1	for No with 12 15 and 12 05, or with 185 and 175 minutes, or “10 minutes late” with correct working <i>Additional guidance:</i> Times may be written in 12-hour form, e.g. 12.15 pm. Treating 145 minutes as 1 hour 45 minutes (arrival 11 25) scores P1 P0 C0 at most. Comparing 12 15 with 13 05 (ignoring the 1 hour) scores P1 P0 C0.
9	Total cost $\pounds 169.50 < \pounds 175$, so she has enough	P1	for the cost of the day passes, e.g. $3 \times 24 + 3 \times 15$ (= 117)
		P1	for the cost of the kayak, e.g. 3×9.50 (= 28.50)
		P1	for a complete process to find the total cost, e.g. “117”+“28.50”+ 2×12 (= 169.50)
		C1	for 169.50 and a correct comparison with 175, e.g. $169.50 < 175$ or £5.50 left <i>Additional guidance:</i> Using 1.5×9.50 (= 14.25) for the kayak can score P1 P0 P1 C0. Only one day pass each (total £91.50) scores P0 P1 P1 C0. The final mark needs the correct total.
10	Three columns side by side: from left to right 2 cm, 1 cm and 3 cm high (each 1 cm wide)	B2	for a correct side elevation (columns of heights 2, 1, 3 from left to right, 1 cm wide)
		(B1	for any two columns correct and in the correct position, or for the correct elevation reflected (heights 3, 1, 2), or for the front elevation) <i>Additional guidance:</i> Ignore internal lines between cubes. Condone the drawing being placed anywhere on the grid. A 3D drawing scores B0.
11	12 people	P1	for a process to find the number of people for one ingredient, e.g. $1500 \div 750 \times 6$ (= 12) or $2200 \div 800 \times 6$ (= 16.5), or amounts for one person, e.g. $800 \div 6$ (= 133.3 ...)
		P1	for a complete process for all four ingredients, e.g. 16.5, 18, 12 and 14, or a scale factor of 2 applied to every ingredient with all four compared
		A1	12 cao <i>Additional guidance:</i> Using 1.5 litres as 150 ml (giving 1.2) scores P1 P1 A0 at most. An answer of 14 or 16 with no working scores P0 P0 A0.
12(a)	€444.60	B1	444.6(0) cao

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Q	Answer	Marks	Guidance
12(b)	£53.72	M1	for $65 \div 1.21$
		A1	53.72 cao <i>Additional guidance:</i> $65 \times 1.21 (= 78.65)$ scores M0 A0. Using the old rate, $65 \div 1.17 (= 55.56)$, scores M0 A0. Accept 53.719 ... rounded or truncated to 53.71 for M1 only.
Total for Question 12: 3 marks			
13(a)	2	B1	cao
13(b)	2.1	M1	for at least 4 correct products $x \times f$ seen, or for 62
		M1	(dep) for $"62" \div 30$
		A1	2.1 cao <i>Additional guidance:</i> Accept 2.07 or 2.06(6 ...) seen with 2.1 as the answer. $62 \div 6 (= 10.3)$ scores M1 M0 A0. $(4 + 7 + 9 + 5 + 3 + 2) \div 6 (= 5)$ scores M0 M0 A0.
Total for Question 13: 4 marks			
14	$x = 5.75$	M1	for $12x - 30 = 39$ or $2x - 5 = \frac{39}{6} (= 6.5)$
		M1	for $12x = 69$ or $2x = 11.5$ oe
		A1	5.75 oe <i>Additional guidance:</i> Accept $\frac{23}{4}$ or $5\frac{3}{4}$. A correct answer with no working scores full marks.
15(a)	238°	B1	answer in the range 236 to 240
15(b)	17 km (from 16.75 to 17.25)	M1	for (their measurement from 6.7 to 6.9) $\times 2.5$
		A1	answer in the range 16.75 to 17.25 <i>Additional guidance:</i> Dividing by 2.5 scores M0 A0.
Total for Question 15: 3 marks			
16(a)	40 minutes	B1	cao
16(b)	6 km	B1	cao
16(c)	18 km/h	M1	for $24 \div$ time, e.g. $24 \div 80 \times 60$ or $24 \div 1.33 \dots$
		A1	18 cao <i>Additional guidance:</i> $24 \div 1.2 (= 20)$ scores M0 A0. $24 \div 80 (= 0.3)$ with no further work scores M0 A0.
Total for Question 16: 4 marks			
17	$\frac{7}{12}$	M1	for $3 + 5 + 4 (= 12)$ or $\frac{5}{12}$ seen or $\frac{a}{12}$ with $a < 12$
		A1	$\frac{7}{12}$ oe

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Accept 0.58(3 ...). $\frac{7}{5}$ (a ratio of parts) scores M0 A0. 7:12 scores M1 A0.
18	Tub A (0.416 ... and 0.4)	P1 P1 C1	for $\frac{15}{36}$ oe for $\frac{2}{5}$ oe for tub A with correct comparable values, e.g. 0.416 ... and 0.4, or $\frac{25}{60}$ and $\frac{24}{60}$, or 41.6% and 40% <i>Additional guidance:</i> Comparing ratios, e.g. $\frac{15}{21}$ (= 0.714 ...) and $\frac{2}{3}$ (= 0.666 ...), scores P0 P0 C0. Accept 0.42 and 0.4 for the C mark.
19	£44.75	P1 P1 P1 A1	for a process to find the area, e.g. $\frac{1}{2}(18.5 + 27) \times 14$ (= 318.5) for a process to find the amount of lawn feed, e.g. "318.5" $\times$ 35 (= 11147.5) for a process to find the number of tubs and the cost, e.g. "11147.5" $\div$ 2500 (= 4.45 ...) rounded up to 5 and $\times$ 8.95 44.75 cao <i>Additional guidance:</i> 4.459 ... $\times$ 8.95 (= 39.91) scores P1 P1 P0 A0. Using $18.5 \times 27 \times 14$ or $(18.5 + 27) \times 14$ for the area loses the first P mark but the later P marks can be awarded ft.
20	Points plotted at (25, 3), (35, 9), (45, 14), (55, 10), (65, 4) and joined with straight lines	B2 (B1)	for a fully correct frequency polygon: points at the midpoints, joined with straight line segments for all 5 points plotted correctly but not joined, or all 5 points plotted at a consistent value within each class (e.g. upper class limits) and joined, or 4 of the 5 points plotted at the midpoints and joined) <i>Additional guidance:</i> Ignore any line drawn before the first point or after the last point. Joining the last point to the first, or drawing a bar chart, scores B1 at most if the points are correct.
21	0.72 g/cm ³	M1 M1 A1	for 5.5^3 (= 166.375) for $120 \div "166.375"$ or $0.12 \times 1000 \div "166.375"$ 0.72 cao <i>Additional guidance:</i> $0.12 \div 166.375$ (= 0.00072 ...) scores M1 M0 A0. Using 5.5×3 or 5.5^2 for the volume scores M0, but the second M1 can be awarded for $120 \div$ their volume.

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Q	Answer	Marks	Guidance
22	A line through the two crossing points of equal arcs from A and B , perpendicular to AB through its midpoint	M1	for two pairs of intersecting arcs of equal radius drawn from A and B
		A1	for a correct line within guidelines, with the construction arcs shown <i>Additional guidance:</i> The line must pass within 2 mm of the midpoint of AB and be within 2° of perpendicular. A correct line with no construction arcs scores M0 A0.
23	6:2:3	P1	for an expression for Maria's number, e.g. $x - 14$ where x is Tomas's number
		P1	for an expression for Jacob's number in terms of x , e.g. $3(x - 14)$
		P1	for forming an equation, e.g. $3(x - 14) = 2x$
		P1	for a complete process to find the three numbers, e.g. $x = 42, 28$ and 84
		A1	6:2:3 cao <i>Additional guidance:</i> Trial and improvement leading to 84, 28, 42 scores P1 P1 P1 P1. An answer of 84:28:42 scores P1 P1 P1 P1 A0, and 2:3:6 (wrong order) also scores P1 P1 P1 P1 A0. $3x - 14 = 2x$ (bracket not expanded correctly) gives $x = 14$ and Maria 0: P1 P1 P1 P0 A0. Other letters or a bar model can score the P marks.
24	6750	P1	for $24\,750 \div 11$ ($= 2250$) or $24\,750 \div \frac{11}{8}$ oe
		P1	for a complete process, e.g. $24\,750 - 8 \times "2250"$ or $3 \times "2250"$
		A1	6750 cao <i>Additional guidance:</i> $\frac{3}{8} \times 24\,750$ ($= 9281.25$) scores P0 P0 A0. An answer of 18 000 scores P1 P0 A0.
25(a)	42 years	B1	cao
25(b)	44 years	B1	cao
25(c)	On average the yoga class is older (median $42 > 34$). The spin class ages are more spread out (range $51 > 44$)	C1	for a correct comparison of the medians in context, e.g. on average the people at the yoga class are older (ft their median)

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Q	Answer	Marks	Guidance
		C1	for a correct comparison of the ranges in context, e.g. the ages at the spin class are more varied (ft their range) <i>Additional guidance:</i> Comparisons must be in context for both marks; if neither is in context but both are correct (e.g. “the median is higher for yoga, the range is higher for spin”), award C1 C0.
Total for Question 25: 4 marks			
26(a)	No. Peak 12%, off-peak 12.5%	P1	for a process to find the percentage increase for one fare, e.g. $(36.40 - 32.50) \div 32.50 \times 100 (= 12)$ or $36.40 \div 32.50 (= 1.12)$
		P1	for a process to find the percentage increase for both fares, e.g. 12 and $(20.70 - 18.40) \div 18.40 \times 100 (= 12.5)$, or 1.12 and 1.125
		C1	for No with 12 and 12.5 (or 1.12 and 1.125) <i>Additional guidance:</i> Dividing by the new fares (10.7 ... % and 11.1 ... %) scores P0 P0 C0. Comparing only 3.90 and 2.30 scores P0 P0 C0.
26(b)	She divided by the new fare (£20.70) instead of the original fare (£18.40)	C1	for an explanation that she has divided by the new fare instead of the original fare oe <i>Additional guidance:</i> Accept “she should have divided by 18.40”. Do not accept “she used the wrong number” without saying which.
Total for Question 26: 4 marks			
27(a)	0.7 (long jump); 0.94, 0.06, 0.94 (high jump)	B1	for 0.7 on the long jump ‘does not win’ branch
		B1	for 0.94, 0.06, 0.94 correctly placed on the high jump branches <i>Additional guidance:</i> Accept equivalent fractions or percentages.
27(b)	0.324	M1	for $0.3 \times 0.94 (= 0.282)$ or $0.7 \times 0.06 (= 0.042)$, ft their tree
		A1	0.324 oe <i>Additional guidance:</i> 0.342 (at least one win) scores M1 A0 only if 0.3×0.94 or 0.7×0.06 is seen.
Total for Question 27: 4 marks			

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Q	Answer	Marks	Guidance
28	No. 83 m/s = 298.8 km/h, which is less than 300 km/h	M1	for $83 \times 60 \times 60 \div 1000$ oe, or $300 \times 1000 \div 3600$ oe
		C1	for No with 298.8 (km/h) or 83.3 ... (m/s) <i>Additional guidance:</i> $83 \times 60 \div 1000$ (= 4.98) scores M0 C0. Accept 83.3 or 83.33 for the comparison.
29(a)	m^{15}	B1	cao
29(b)	x^{13}	B1	cao
29(c)	$3p^3 - 12p$	B1	cao
Total for Question 29: 3 marks			