

Mark Scheme

Edexcel Foundation Mock Set A Paper 2

For Pearson Edexcel GCSE Mathematics (1MA1)

Foundation tier • Paper 2 (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)	179	147	108	69	30
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	5800	B1	cao
2	40	B1	cao
3	−9, −5, −2, 3, 6	B1	cao
4	Hexagon	B1	cao <i>Additional guidance: Condone irregular hexagon. Ignore poor spelling if the intention is clear.</i>
5	6	B1	cao
6(a)	7.6 cm	B1	for an answer in the range 7.4 to 7.8
6(b)	118°	B1	for an answer in the range 116 to 120
Total for Question 6: 2 marks			
7	£288	M1	for 12.80×1.5 (= 19.20) or $(4 + 5 + 3) \times 12.80$ (= 153.60) or 7×12.80 (= 89.60) seen
		M1	for a complete method, eg $12 \times 12.80 + 7 \times 12.80 \times 1.5$
		A1	for 288 oe, eg 288.00 <i>Additional guidance: 19×12.80 (= 243.20) or 19×19.20 (= 364.80) scores MOMOA0 unless a correct method for one part is also seen.</i>
8(a)	17	B1	cao
8(b)	Subtract 6	B1	for subtract 6 oe <i>Additional guidance: Accept −6, take away 6, goes down in 6s. Do not accept 6n, −6n or 6 alone.</i>
8(c)	The terms go ... 11, 5, −1 ..., so 2 is missed out (all the terms are odd and 2 is even).	C1	for a correct explanation, eg the sequence goes 5 then −1, or all the terms are odd (and 2 is even), or $47 - 2 = 45$ is not a multiple of 6 <i>Additional guidance: Do not accept “the numbers are going down” or “2 is not in the sequence” without a reason.</i>
Total for Question 8: 3 marks			
9	Pie chart with sectors Car 126°, Tram 81°, Bus 99°, Cycle 54°, each labelled	M1	for $360 \div 40$ (= 9) or for any correct angle, eg 14×9 (= 126)
		A1	for all four angles correct: 126, 81, 99, 54 (may be seen on the diagram)
		C1	for a fully correct pie chart with all sectors labelled

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Angles drawn must be accurate to within $\pm 2^\circ$. Sectors may be in any order. C1 can be awarded for a correct labelled pie chart even if the angles are not written down.
10(a)	117 miles	M1 A1	for 52×2.25 oe, eg $52 \times 2 + 52 \div 4$ cao <i>Additional guidance:</i> 52×2.15 (= 111.8) scores M0A0.
10(b)	No: her average speed was 6.4 km/h, which is less than 7 km/h	M1 C1	for $11.2 \div 1.75$ oe, eg $11.2 \div 105 \times 60$, or 7×1.75 (= 12.25), or $11.2 \div 7$ (= 1.6 hours) for No with correct supporting figures, eg 6.4 (km/h), or 12.25 and 11.2, or 1 h 36 min (or 96 min) and 1 h 45 min (or 105 min) <i>Additional guidance:</i> $11.2 \div 1.45$ (= 7.72 ...) leading to "Yes" scores M0C0. A correct speed of 6.4 with no decision scores M1C0.
Total for Question 10: 4 marks			
11	57°	M1 A1 C1	for angle $TVU = 52^\circ$ (may be marked on the diagram) or $180 - 52$ (= 128) for angle PTV for 57 (dep on M1) for appropriate reasons linked to their method, eg <i>alternate angles are equal</i> and <i>angles in a triangle add up to 180°</i> <i>Additional guidance:</i> Alternative method: angle $PTU = 71^\circ$ (alternate angles are equal), then $x = 180 - 71 - 52$ (angles on a straight line add up to 180°). Reasons must use the correct words: accept <i>alternate</i> , <i>triangle</i> , <i>straight line</i> with <i>angles</i> and <i>180</i> . Do not accept "Z angles".
12(a)	30gh	B1	for 30gh oe <i>Additional guidance:</i> Accept 30hg. Do not accept $30 \times g \times h$.
12(b)	31.5	M1 A1	for correct substitution, eg $5 \times 4.5 - 3 \times -3$ or 22.5 and 9 seen cao <i>Additional guidance:</i> 13.5 (from $22.5 - 9$) scores M1A0 only if $5 \times 4.5 - 3 \times -3$ is seen.
Total for Question 12: 3 marks			

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Q	Answer	Marks	Guidance
13	Sunny Days Pharmacy (£40.80 compared with £42.00)	P1	for a process to find the cost at Sunny Days, eg $6 \times 6.80 (= 40.80)$ or $6.80 \times 2 (= 13.60)$ for 3 bottles
		P1	for a process to find the reduced price of a pack, eg $17.50 \times 0.8 (= 14)$ or $17.50 \times 0.2 (= 3.50)$
		P1	for a complete process to find comparable figures, eg 40.80 and 42, or 13.60 and 14, or 4.53 and 4.67 (per bottle)
		C1	for Sunny Days Pharmacy with correct supporting figures <i>Additional guidance:</i> Comparable figures may be totals for 9 bottles, costs for 3 bottles or costs for one bottle (4.53...) and 4.66(...) or 4.67). $9 \times 6.80 (= 61.20)$ with no free bottles scores P0 for Sunny Days.
14	14	P1	for $1 - (0.32 + 0.17 + 0.26) (= 0.25)$ oe
		P1	for $0.32 \times 200 (= 64)$ or “0.25” $\times 200 (= 50)$
		P1	for a complete process, eg “64” – “50” or $(0.32 - “0.25”) \times 200$
		A1	for 14 cao <i>Additional guidance:</i> 0.07 or $\frac{14}{200}$ as the final answer scores P1P0P0A0 unless $\times 200$ is seen. $0.32 \times 200 - 0.26 \times 200 (= 12)$ (using white instead of purple) scores P0P1P0A0.
15(a)	0.2274286958	M1	for $\sqrt{100.94}$ or 10.04(6 ...) or 44.176 seen
		A1	for 0.2274286958(...) <i>Additional guidance:</i> Accept 0.22742869 ... with at least the first 6 figures correct for M1 only.
15(b)	0.23	B1ft	for 0.23 or ft their answer to (a) given to 2 significant figures <i>Additional guidance:</i> ft only if their answer to (a) has more than 2 significant figures.
Total for Question 15: 3 marks			
16	£557	P1	for a process to find the area of one rectangle, eg $9 \times 3.2 (= 28.8)$ or $4 \times 7.5 (= 30)$ or $(7.5 - 3.2) (= 4.3)$ or $(9 - 4) (= 5)$ seen
		P1	for a complete process to find the total area, eg $9 \times 3.2 + 4 \times 4.3 (= 46)$
		P1	for a process to find the number of packs, eg “46” $\div 2.4 (= 19.1 \dots)$

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Q	Answer	Marks	Guidance
		P1	for a process to find the cost using a whole number of packs, eg "20" $\times$ 27.85
		A1	for 557 cao <i>Additional guidance:</i> Other splits: $4 \times 7.5 + 5 \times 3.2$ ($= 30 + 16 = 46$) or $9 \times 7.5 - 5 \times 4.3$ ($= 67.5 - 21.5 = 46$). $19.1 \dots \times 27.85$ ($= 533.8 \dots$) scores P1P1P1P0A0.
17	$138.55 \leq L < 138.65$	B1	for 138.55 in the correct position
		B1	for 138.65 in the correct position <i>Additional guidance:</i> Accept 138.6499 for 138.65. Do not accept 138.649 or 138.64.
18(a)	He worked out -5×-2 as -10 . It should be $+10$ (so the answer is $3x + 22$).	C1	for a correct explanation, eg -5×-2 should be $+10$ (not -10), or $-5(x - 2) = -5x + 10$, or the answer should be $3x + 22$ with the error identified <i>Additional guidance:</i> Do not accept a vague answer such as "he got the signs wrong" or "he expanded wrongly" without saying which term is wrong. Writing only the correct answer $3x + 22$ scores C0.
18(b)	$5y(3y + 4)$	B2	for $5y(3y + 4)$
		(B1	for $5(3y^2 + 4y)$ or $y(15y + 20)$ or $5y(\dots)$ with one correct term in the bracket)
Total for Question 18: 3 marks			
19	52.9%	P1	for a process to find the income from one group, eg 48×1.20 ($= 57.60$) or $(60 - 48) \times 0.55$ ($= 6.60$)
		P1	for a process to find the total income, eg $48 \times 1.20 + 12 \times 0.55$ ($= 64.20$)
		P1	for $\frac{"64.20" - 42}{42} \times 100$ oe or $\frac{"64.20"}{42} \times 100$ ($= 152.8 \dots$)
		A1	for answer in the range 52.85 to 52.9 <i>Additional guidance:</i> Accept 52.857 ... if seen with 52.9 given. $\frac{22.20}{64.20} \times 100$ ($= 34.6$) scores P1P1P0A0.
20(a)	$-3 < x \leq 2$	B1	for $-3 < x \leq 2$ oe <i>Additional guidance:</i> Accept $x > -3$ and $x \leq 2$. Do not accept a list of integers.
20(b)	$x \geq 5.5$	M1	for a correct first step, eg $7x - 3x \geq 18 + 4$ or $4x \geq 22$
		A1	for $x \geq 5.5$ oe

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Accept $x \geq \frac{11}{2}$. 5.5 or $x = 5.5$ on the answer line scores M1A0.
Total for Question 20: 3 marks			
21	10.2 cm	M1	for $13.4^2 - 8.7^2$ (= 103.87)
		A1	for answer in the range 10.19 to 10.2
22	No: 100 g costs £3.36 in Leeds and about £3.39 in Lisbon	P1	for a correct conversion, eg $5.90 \div 1.16$ (= 5.08 ...) or 8.40×1.16 (= 9.744)
		P1	for a complete process to find figures for the same mass in the same currency, eg £3.36 and £3.39 per 100 g, or £25.20 and £25.43 for 750 g, or €3.89(76) and €3.93(3 ...) per 100 g
		C1	for No with correct comparable figures <i>Additional guidance:</i> Accept figures rounded or truncated to at least 3 significant figures if they allow a correct comparison. 5.90×1.16 is an incorrect conversion and scores P0 for the conversion.
23	Yes: the interest is £265.47, which is more than £260	M1	for 3600×1.024^3 (= 3865.47 ...) oe, or a complete year-by-year method
		A1	for 265.47(...) or 3865.47(...) seen
		C1	for Yes with 265.47 and 260, or 3865.47 and 3860, compared <i>Additional guidance:</i> Simple interest $3600 \times 0.024 \times 3$ (= 259.2) leading to “No” scores M0A0C0. Accept 265.5 or 265 if 3865.47 ... is seen.
24	No: $x = 8$, so $AB = AC = 21$ cm and $BC = 20$ cm. BC is the shortest side.	P1	for an expression for the perimeter, eg $2(2x + 5) + 3x - 4$ or $7x + 6$
		P1	for forming an equation and starting to solve it, eg $7x + 6 = 62$ or $7x = 56$
		A1	for $x = 8$
		C1	for No with $BC = 20$ and AB (or AC) = 21

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> $2x + 5 + 3x - 4 = 62$ (only one $(2x + 5)$) leading to $x = 12.2$ scores P0P1A0C0 if correctly solved. A decision based on comparing $3x - 4$ with $2x + 5$ without finding x scores no marks. $x = 8$ and “No” without the side lengths scores P1P1A1C0.
25(a)	No: the modal class is the class with the highest frequency, $2 < m \leq 4$ (23 parcels)	C1	for No with a correct reason, eg the modal class has the highest frequency, or the modal class is $2 < m \leq 4$, or $8 < m \leq 10$ has the lowest frequency <i>Additional guidance:</i> Accept 2–4 or 2 to 4 for the modal class. “No” with no reason, or with an incorrect reason, scores C0.
25(b)	4.525 kg	M1 M1 A1	for finding at least 4 products $f \times x$ consistently within the class intervals (including the ends) (dep) for using correct midpoints and dividing “362” by 80 for 4.525 oe <i>Additional guidance:</i> Accept 4.52 or 4.53 if 4.525 is seen. Using the upper ends gives $\frac{442}{80} = 5.525$ and scores M1M0A0.
Total for Question 25: 4 marks			
26	42.3	M1 A1	for $\cos x = \frac{9.4}{12.7}$ oe or a complete method using Pythagoras then sin or tan for answer in the range 42.2 to 42.3 <i>Additional guidance:</i> $\cos^{-1}(0.74 \dots)$ seen implies M1.
27	Yes, with 81(.4 ...) minutes or 8.36 pm	P1 P1 P1 A1 C1	for $\pi \times 90^2 \times 80$ ($= 2\,035\,752 \dots$) for “2 035 752” $\div 1000$ ($= 2035.7 \dots$) or 1500×1000 ($= 1\,500\,000$) for “2035.7” $\div 1500$ ($= 1.35 \dots$) or “2035.7” $\div 25$ ($= 81.4 \dots$) or a complete method to find the time in minutes for 81(.4 ...) minutes or 1 h 21 min or 8.36 pm (or 8.37 pm) for Yes with correct supporting figures, eg empty at 8.36 pm, or 81 minutes and 90 minutes compared, or 2250 litres pumped out by 8.45 pm and 2035.7 litres

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Using $\pi = 3.14$ or 3.142 gives 81.3 or 81.4 minutes and can score full marks. Alternative: in 90 minutes the pump removes $1500 \times 1.5 = 2250$ litres, which is more than 2035.7 litres (P1P1P1A1 for 2250 and 2035.7, C1 for Yes). Using 180 as the radius gives 8143 litres: P0 for the volume, but the next two P marks can be awarded (this leads to “No”). 1.36 hours written as 1 h 36 min (8.51 pm, “No”) scores P1P1P1A0C0.
28	36 minutes	P1	for $5 \times 48 (= 240)$ or $5 \times 16 (= 80)$ or $\frac{16}{48} (= \frac{1}{3})$ of the job done
		P1	for a process to find the time for the rest of the job with 8 printers, eg $(240 - 80) \div 8 (= 20)$ or $\frac{2}{3} \times 5 \times 48 \div 8$
		A1	for 36 cao <i>Additional guidance:</i> $240 \div 8 (= 30)$ alone scores P1P0A0. An answer of 20 with correct working scores P1P1A0.