

Mark Scheme

Edexcel Foundation Mock Set B Paper 1

For Pearson Edexcel GCSE Mathematics (1MA1)

Foundation tier • Paper 1 (Non-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	-5	B1	cao
2	$\frac{9}{10}$	B1	for $\frac{9}{10}$ oe <i>Additional guidance:</i> Accept any equivalent fraction, eg $\frac{90}{100}$. Do not accept $\frac{1}{9}$ or $\frac{9}{100}$.
3	Reflex	B1	for reflex <i>Additional guidance:</i> Condone poor spelling, eg reflects. Do not accept obtuse.
4	6m	B1	cao <i>Additional guidance:</i> Accept $6 \times m$. Do not accept m^6 or $m6$.
5	63	B1	cao
6(a)	30	B1	cao
6(b)	4 whole circles and a half circle drawn for Thursday	B2	for 4 whole symbols and a half symbol drawn for Thursday <i>Additional guidance:</i> (B1 for 36 seen, or for 4 whole symbols drawn with an incorrect part symbol.) Condone symbols that are not perfect circles if the intention is clear. ft their (a) for B1 only, eg "their 30" + 6 seen.
6(c)	22	B1ft	for 22 or ft "their 36" – 14 <i>Additional guidance:</i> Do not accept -22. An answer of $2\frac{3}{4}$ (counting symbols) scores B0.
Total for Question 6: 4 marks			
7	5	P1	for $20 - 2.75$ (= 17.25) or 4×0.75 (= 3) oe in pence
		P1	for "17.25" – "3" (= 14.25) or $2.75 + 3$ (= 5.75) and $20 - "5.75"$
		P1	for a complete process to find the number of sandwiches, eg " $14.25 \div 2.85$ " or repeated addition of 2.85 to 14.25
		A1	cao <i>Additional guidance:</i> Accept working in pence throughout. Embedded answer, eg $4 \times 0.75 + 5 \times 2.85 + 2.75 = 20$, scores P1P1P1A0 unless 5 is stated as the answer. An answer of 6.0 ... from $17.25 \div 2.85$ (juice ignored) scores P1POP0A0.
8(a)	$x + 7$	B1	for $x + 7$ oe

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Accept $7 + x$. Do not accept $7x$ or $x7$.
8(b)	$3x$	B1	for $3x$ oe <i>Additional guidance:</i> Accept $3 \times x$ or $x \times 3$ or $x + x + x$. Do not accept $x + 3$.
8(c)	18 cm	B1	cao
Total for Question 8: 3 marks			
9(a)	14 cm^2	B1	cao
9(b)	22 cm	B1	cao
Total for Question 9: 2 marks			
10(a)	3, 5; 3, 5; 5, 6	B2	for a fully correct table <i>Additional guidance:</i> (B1 for at least 4 of the 6 missing entries correct)
10(b)	No: a total of 5 is just as likely as a total of 4 (both are $\frac{3}{12}$).	C1	for No with a correct reason, eg 5 also appears 3 times, or $P(4) = P(5) = \frac{3}{12}$ <i>Additional guidance:</i> ft their table if B1 scored in (a). Do not accept "No" with no reason, or a reason that does not mention a total of 5 (eg "it is all luck").
Total for Question 10: 3 marks			
11	7:3	M1	for 84:36 or a correct ratio partly simplified, eg 42:18, 28:12, 21:9, 14:6
		A1	for 7:3 <i>Additional guidance:</i> 3:7 scores M1A0. Accept $1:\frac{3}{7}$ for M1 only.
12(a)	Shape with corners $(-3, 1)$, $(-6, 1)$, $(-6, 2)$, $(-4, 4)$, $(-3, 4)$	B2	for a correct reflection with vertices at $(-3, 1)$, $(-6, 1)$, $(-6, 2)$, $(-4, 4)$, $(-3, 4)$ <i>Additional guidance:</i> (B1 for a reflection in any vertical line, eg in the y-axis, or for 4 of the 5 vertices correct.) Condone a shape that is not shaded.
12(b)	$x = -1$	B1	cao <i>Additional guidance:</i> Do not accept -1 alone or $y = -1$.
Total for Question 12: 3 marks			

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Q	Answer	Marks	Guidance
13	Yes: $\frac{1}{3}$ of 1000 m is 333.3... m, and 350 m is more than this.	M1 C1	for $1000 \div 3$ ($= 333.3 \dots$), or $\frac{350}{1000}$ oe and $\frac{1}{3}$ in a comparable form, eg 0.35 and 0.33..., or $\frac{21}{60}$ and $\frac{20}{60}$ for Yes with a correct comparison, eg $350 > 333.3$ or $0.35 > 0.33$ <i>Additional guidance:</i> Accept 333 or 333.3 for $1000 \div 3$. "Yes" with no working scores M0C0. Comparing 350 with $\frac{1}{3}$ of 100 (33.3) scores M0C0.
14(a)	1924	B1	cao
14(b)	0.74	B1	cao
Total for Question 14: 2 marks			
15	$8n - 5$	M1 A1	for $8n + k$ where $k \neq -5$, or $8n$ for $8n - 5$ oe <i>Additional guidance:</i> $n = 8n - 5$ scores M1A0. $n + 8$ scores M0A0.
16(a)	$h = 7$	M1 A1	for $252 \div (6 \times 6)$ or $252 \div 6 \div 6$ or $6 \times 6 \times h = 252$ cao <i>Additional guidance:</i> Embedded answer $6 \times 6 \times 7 = 252$ scores M1A0 unless 7 is stated.
16(b)	No: the surface area is 256 cm^2 , which is more than 250 cm^2 .	P1 P1 C1	for finding the area of at least two different faces, eg 12×5 ($= 60$), 12×4 ($= 48$), 5×4 ($= 20$) for a complete process to find the total surface area, eg $2 \times 60 + 2 \times 48 + 2 \times 20$ ($= 256$) for No with 256 (and 250) <i>Additional guidance:</i> Use of the volume, $12 \times 5 \times 4 = 240$, scores P0P0C0. Adding only three faces (128) scores P1P0C0. Accept a difference of 6 cm^2 with a correct method for C1.
Total for Question 16: 5 marks			
17	58	M1 M1 A1	for $812 \div 14$ or $81.2 \div 1.4$ or $\frac{812}{14}$ oe for a complete method to divide, eg short or long division, repeated subtraction, or chunking, condone one arithmetic error cao <i>Additional guidance:</i> Answers of 0.58, 5.8 or 580 with correct working score M1M1A0. A correct answer with no working scores full marks.

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Q	Answer	Marks	Guidance
18(a)	12 25	P1	for $105 \div 45$ ($= 2.33 \dots$) or 2 h 20 min or 140 (min)
		P1	for a complete process, eg 09 40+ “2 h 20 min” + 25 min, or “140” + 25 ($= 165$) min added to 09 40
		A1	for 12 25 oe <i>Additional guidance:</i> Accept 12:25, 12.25 pm or 25 past 12. Do not accept 12.25 am. An answer of 12 00 (break not added) scores P1P0A0. Using 2.33 hours as 2 h 33 min gives 12 38: P1P1A0.
18(b)	The coach would arrive later than 12 25, because the journey would take longer.	C1	for a statement that the coach would arrive later (than their answer to (a)) oe <i>Additional guidance:</i> Accept “it would take more time” or “the journey would be longer”. Do not accept “it would arrive at a different time” or “it would arrive earlier”.
Total for Question 18: 4 marks			
19(a)	$4\frac{4}{15}$	M1	for correct improper fractions with a common denominator, eg $\frac{25}{15} + \frac{39}{15}$, or $3 + \frac{10}{15} + \frac{9}{15}$
		A1	for $4\frac{4}{15}$ <i>Additional guidance:</i> $\frac{64}{15}$ or $3\frac{19}{15}$ as the final answer scores M1A0.
19(b)	$\frac{9}{2} \times \frac{5}{6} = \frac{45}{12} = \frac{15}{4} = 3\frac{3}{4}$	M1	for $\frac{9}{2}$ and $\frac{6}{5}$ oe
		M1	for $\frac{9}{2} \times \frac{5}{6}$ oe or $\frac{45}{10} \div \frac{12}{10}$ oe
		A1	for a fully correct method leading to $\frac{45}{12}$ or $\frac{15}{4}$ and then $3\frac{3}{4}$ <i>Additional guidance:</i> Working with decimals, eg $4.5 \div 1.2 = 3.75$, scores M1M1 only if $4.5 \div 1.2$ is worked out correctly by a written method; A1 needs $3.75 = 3\frac{3}{4}$ shown.
Total for Question 19: 5 marks			
20	1 6 8; 2 1 3 5 6 9; 3 1 2 5 7 8; 4 1 4 7; key 2 5 = 25 minutes	B3	for a fully correct ordered diagram with a key

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> (B2 for a correct ordered diagram with no key, or an ordered diagram with a key and one error or omission, or a fully correct unordered diagram with a key) (B1 for an ordered or unordered diagram with no more than two errors or omissions, or for a correct key) Accept a key such as $2 \mid 5 = 25$ (minutes). The key must use a value that fits the stems.
21	$w = 100$	P1 P1 P1 A1	for $180 \div (7 + 2)$ ($= 20$) or $x = 140$ or $y = 40$ for angle $DCB = "40"$ or angle $DBC = \text{angle } DCB$ ($= 40$), may be on the diagram for $180 - 2 \times "40"$ cao <i>Additional guidance:</i> Angles may be shown on the diagram. Using $x:y = 7:2$ inside the triangle (eg $180 \div 9$ to give base angles of 140 or 40 in the triangle) is not a correct process unless ABC is used as a straight line. $w = 140$ (angle ABD given as w) scores P1P0P0A0.
22(a)	2.5 hours	M1 M1 A1	for rounding both numbers, eg 3000 and 20 (or 3100 and 20) for $"3000" \div "20"$ ($= 150$) for 2.5 to 2.6 <i>Additional guidance:</i> Accept 2 h 30 min. Accept $3100 \div 20 \div 60 = 2.58 \dots$ for full marks. An answer of 150 (minutes) scores M1M1A0. No marks for $3140 \div 19.6$ worked out exactly with no rounding seen.
22(b)	Underestimate: 3140 was rounded down and 19.6 was rounded up, so the real time is longer.	C1	for underestimate with a correct reason, eg 3140 rounded down and 19.6 rounded up <i>Additional guidance:</i> ft their roundings in (a). The reason must refer to both numbers or to the effect on the division, eg "smaller number divided by a bigger number". "Underestimate" alone, or "because I rounded", scores C0.
Total for Question 22: 4 marks			
23(a)	Solid circle at -4 , open circle at 1, joined by a line	B2	for a line from -4 to 1 with a closed circle at -4 and an open circle at 1

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> (B1 for a line from -4 to 1 with at least one end correct, or for correct circles at -4 and 1 with no line or an incorrect line)
23(b)	$x \leq 4.5$	M1	for a correct first step to isolate the x terms or the number terms, eg $9x - 5x \leq 20 - 2$ or $4x \leq 18$ (condone $=$, $<$ or $>$ in place of $\leq$)
		A1	for $x \leq 4.5$ oe <i>Additional guidance:</i> Accept $x \leq \frac{9}{2}$ or $x \leq 4\frac{1}{2}$. $x = 4.5$ or 4.5 alone scores M1A0. $x < 4.5$ scores M1A0.
Total for Question 23: 4 marks			
24	4000 newtons/m ²	M1	for $2400 \div (0.8 \times 0.75)$ or $2400 \div 0.6$
		A1	cao <i>Additional guidance:</i> $2400 \times 0.6 = 1440$ scores M0A0. $2400 \div 6 = 400$ (area worked out as 6) scores M1A0 if 0.8×0.75 is seen.
25(a)	20:15:6	M1	for 20:15 or 15:6 or for a multiple of 20:15:6
		A1	for 20:15:6 oe <i>Additional guidance:</i> Accept any equivalent integer ratio, eg 40:30:12. 4:3:2 or 4:5:2 scores M0A0.
25(b)	$\frac{20}{41}$	M1	ft for $\frac{p}{p+q+r}$ from their $p:q:r$ in (a)
		A1	for $\frac{20}{41}$ oe, or ft their (a) <i>Additional guidance:</i> Do not accept 20:41 for A1 (M1 only). From 4:3:2 in (a), $\frac{4}{9}$ scores M1A1ft.
Total for Question 25: 4 marks			
26	No: she needs £28.50, which is more than £28.	P1	for a correct process to eliminate one variable, eg $2w + 4b = 23$ and subtraction, or $2w + 3b - (w + 2b) = w + b (= 8)$
		P1	for a correct process to find one price, eg $b = 23 - 19.50 (= 3.50)$ or $w = 11.50 - 2 \times 3.50$
		A1	for wool £4.50 and buttons £3.50
		P1	for $4 \times "4.50" + 3 \times "3.50" (= 28.50)$
		C1	for No with £28.50 (or with 50p more needed)

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Q	Answer	Marks	Guidance
			<i>Additional guidance:</i> Trial and improvement leading to correct prices that fit both totals scores the first three marks. Answers may be in pence. Prices found from one total only (eg £4.50 and £3.50 guessed and checked against one total) score POPOAO, but P1 is available for $4 \times [\text{wool}] + 3 \times [\text{buttons}]$.
27(a)	No: $4^{-2} = \frac{1}{16}$, which is a positive number.	C1	for No with $\frac{1}{16}$ oe, or a correct reason, eg a negative power means 1 over 4^2 <i>Additional guidance:</i> Accept 0.0625. Do not accept “No” with -16 , -8 or no reason.
27(b)	2^7	M1 A1	for $8 = 2^3$ seen, or 2^{12} , or 2^{9+3-5} , or $2^4 \times 8$ cao <i>Additional guidance:</i> $2^{12} \div 2^5$ with the answer 2^{17} or $2^{2.4}$ scores M1A0. 128 as the final answer scores M1A0.
Total for Question 27: 3 marks			
28	$\begin{pmatrix} 11 \\ -14 \end{pmatrix}$	M1 A1	for $\begin{pmatrix} 9 \\ -6 \end{pmatrix}$ or $\begin{pmatrix} -2 \\ 8 \end{pmatrix}$ seen, or one correct component in the answer cao <i>Additional guidance:</i> Do not accept coordinates $(11, -14)$ for A1 (M1A0). $\begin{pmatrix} 7 \\ -14 \end{pmatrix}$ (from $9 - 2$) scores M1A0.