



Mark Scheme (Results)

Summer 2025

Pearson Edexcel International GCSE
In Mathematics A (4MA1)
Paper 2FR Foundation Tier

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme.
Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

- **Types of mark**
 - M marks: method marks
 - A marks: accuracy marks
 - B marks: unconditional accuracy marks (independent of M marks)
- **Abbreviations**
 - cao – correct answer only
 - ft – follow through
 - isw – ignore subsequent working
 - SC - special case
 - oe – or equivalent (and appropriate)
 - dep – dependent
 - indep – independent

- awrt – answer which rounds to
- eoo – each error or omission

- **No working**

If no working is shown then correct answers normally score full marks

If no working is shown then incorrect (even though nearly correct) answers score no marks.
- **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If it is clear from the working that the “correct” answer has been obtained from incorrect working, award 0 marks.

If a candidate misreads a number from the question. Eg. Uses 252 instead of 255; method marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review. If there is a choice of methods shown, mark the method that leads to the answer on the answer line; where no answer is given on the answer line, award the lowest mark from the methods shown.

If there is no answer on the answer line then check the working for an obvious answer.
- **Ignoring subsequent work**

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: eg. Incorrect cancelling of a fraction that would otherwise be correct.

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect eg algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.
- **Parts of questions**

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded to another.

International GCSE Mathematics					
Values in quotation marks must come from a correct method previously seen unless clearly stated otherwise.					
Q	Working	Answer	Mark	Notes	
1	(a)		46 83 99 148 229	1	B1 cao
	(b)		0.08 0.25 0.417 0.46 0.5	1	B1 cao
	(c)		$\frac{81}{100}$	1	B1 oe fraction
	(d)		0.25	1	B1 allow $\frac{1}{4}$ oe
					Total 4 marks

2	(a)		9	1	B1 cao
	(b)	2 4 6 7 9 9 10 or 10 9 9 7 6 4 2		2	M1 for ordering the numbers allow one error or one omission
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	7		A1
	(c)		8	1	B1 cao
					Total 4 marks

3	(a)(i)		Cube	1	B1 allow misspelling, allow cuboid Allow prism or square prism or rectangular prism
	(ii)		12	1	B1 cao
	(b)		B and D	1	B1 allow D and B (or b and d etc)
	(c)		C	1	B1 allow c
					Total 4 marks

4	(a)		5	1	B1
	(b)	$3 \times 100 (= 300)$ or $3 - 0.85 (= 2.15)$ or digits 300 – 85 or 85 – digits 300		2	M1 for conversion to centimetres or a method to work out the difference in metres or a method to find the difference in centimetres using their converted 300 For digits 300, allow 30, 300, 3000, 0.3, 0.03 and so on, but NOT 3
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	215		A1 allow –215
					Total 3 marks
5	(a)		5a	1	B1
	(b)		7bc	1	B1 oe eg 7cb
	(c)		8	1	B1
					Total 3 marks
6	(a)		25	1	B1 cao
	(b)		–23	1	B1 cao
					Total 2 marks

7	$\frac{1}{5} \times 80 (=16)$ or $\left(1 - \frac{1}{5}\right) \times 80 (=64)$ oe		4	M1	for a method to find the number of large burgers or the number of small burgers
	“16” $\times 3 (=48)$			M1	for a method to find the total cost of the large burgers
	176 – “48” (=128)			M1	for a method to find the total cost of the small burgers
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	2		A1	
				Total 4 marks	

8	150 $\div 2 (=75)$		3	M1	for a method to find the cost of the room without tax for 1 night
	or 5 $\times 7 (=35)$			or for a method to find the total cost of the tax for 7 nights	
	or (150 + 5 $\times 2$) $\div 2 (=80)$			or for a method to find the total cost of the room and the tax for 1 night	
	7 \times “75” + “35” (= 525 + 35)			M1	for a complete method to find the total cost of the room and the tax for 7 nights
	or (“75” + 5) $\times 7$				
	or “80” $\times 7$				
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	560		A1	
				Total 3 marks	

9	(a)		<i>CM, CJ, CT, FM, FJ, FT, PM, PJ, PT</i>	2	B2 for correct outcomes listed with no repeats and no extras (B1 for 5, 6, 7 or 8 correct outcomes listed, ignore repeats and ignore extras or for 9 correct outcomes listed, ignore repeats and ignore extras)
	(b)		$\frac{4}{7}$	1	B1 oe
					Total 3 marks

10	(a)		40	1	B1
	(b)	$19.20 \div 0.80 (= 24)$ oe		2	M1 for a method to find the number of kilometres she drove
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	15		A1 cao
					Total 3 marks

11	$\frac{14}{7} (= 2)$ or $\frac{5}{7} \times 14 (= 10)$ or $\frac{4}{7} \times 14 (= 8)$ or any correct value marked on the vertical axis		3	M1 for working with the scale
	“10” $\times 3 (= 30)$ or $5 \times 3 + 7 \times 1 (= 15 + 7 = 22)$ or $5 \times 3 + 14 (= 15 + 14 = 29)$			M1 for a method to find the number of points won or for a method to work out the total number of points using a vertical scale of 1 game per cm Note: M0M1 is possible
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	44		A1
				Total 3 marks

12	(a)	$[8.8, 9.2] \times 5000 (= [44\,000, 46\,000])$ or $5000 \div 1000 (= 5)$ or any seen value $\div 1000$		3	M1 for measuring the line (± 0.2 cm tolerance, 8.8 cm to 9.2 cm) and using the scale or for an attempt to convert a value into kilometres Do not allow any seen value $\div 1000$ if clearly linked to the wrong unit, eg mm
		$["44\,000", "46\,000"] \div 1000$ or $[8.8, 9.2] \times "5"$			M1 for use of scale and conversion
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	45		A1 allow 44 – 46, must agree with their measurement
	(b)		4 (hours) 25 (minutes)	2	B2 for 4 (hours) and 25 (minutes) (B1 for 4 (hours) or 25 (minutes))
					Total 5 marks

13	(a)		$5(3 - x)$	1	B1
	(b)	$35 = 5 \times p + 7 \times 2$ or $5p = d - 7r$ or $\frac{d}{5} = p + \frac{7}{5}r$ oe		3	M1 oe for a correct substitution in an equation or for a correct first step in re-arranging
		$5p = 35 - \text{"14"}$ or $5p = 21$ or $-5p = -35 + \text{"14"}$ or $-5p = -21$ or $(p =) \frac{35 - \text{"14"}}{5}$ or $(p =) \frac{-35 + \text{"14"}}{-5}$ oe			M1 oe for rearranging to find the value of $5p$ or the value of $-5p$ or a complete method to find the value of p
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	$\frac{21}{5}$		A1 oe eg 4.2
	(c)(i)		$m + n$	1	B1 oe condone $s + l$
(ii)		$12m + 25n$	2	B2 for final answer $12m + 25n$ or $25n + 12m$ (B1 for $12m$ or $25n$) For B2 or B1, condone use of s and l for m and n respectively	
					Total 7 marks

14	(a)	$450 \div 90 (= 5)$ oe or $90 \div 6 (= 15)$ oe		2	M1 for a method to find the number of batches of 6 biscuits made or the amount of flour needed per biscuit
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	30		A1
	(b)	$84 \div 6 (= 14)$ oe or $75 \div 6 (= 12.5)$ oe		2	M1 for a method to find the number of batches of 6 biscuits made or the amount of butter needed per biscuit
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	1050		A1
	(c)	$624 \div (3 + 5) (= 78)$ oe or $624 \times \frac{3}{3+5} (= 234)$ or $624 \times \frac{5}{3+5}$ oe		2	M1 for a method to find the value of one part of the ratio or for a method to find the value of three parts or for a complete method
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	390		A1
					Total 6 marks

15	$1 - \frac{2}{5} \left(= \frac{3}{5} \right)$ oe or (green : red + blue =) 2 : 3 OR eg $\frac{x}{x+12} = \frac{2}{5}$ or $\frac{n-12}{n} = \frac{2}{5}$		3	M1 for finding the proportion of counters that are not green (may be a percentage or decimal) or for a correct ratio (allow ratio in any order) Values in ratio do not need labels, but if labels are used, they must be correct This is implied by eg 12 (counters) = 3 (parts) OR for forming a correct equation in terms of the number of green counters or the total number of counters in the bag (allow use of any letter)
	$\frac{(7+5)}{"3"}$ oe or $\frac{(7+5)}{"3"} \times 5$ oe (= 20) or $(7+5) \div \frac{5}{3}$ (= 20) OR $x = \frac{12 \times 2}{5-2}$ or $n = \frac{5 \times 12}{5-2}$			M1 for a method to find the value one-fifth of the counters or for a method to find the total number of counters in the bag OR for a correct method to solve a correct equation
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	8		A1 cao Note: answer $\frac{8}{20}$ scores M1M1A0
				Total 3 marks

16		$96 \div 12 (= 8)$		3	M1	for a complete method to find the height of the parallelogram
		$\frac{1}{2}(18 + 26) \times [8]$			M1	for a method to find the area of the trapezium (do not allow missing brackets unless recovered) where [8] is what they believe to be the height of the trapezium and must be positive. Do not allow [8] to be 12 or 1
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	176		A1	
					Total 3 marks	

17	(a)		$9c(2 - 5d)$	2	B2	for $9c(2 - 5d)$ or $-9c(5d - 2)$ (B1 for $9(2c - 5cd)$ or $c(18 - 45d)$ or $3c(6 - 15d)$ or $3(6c - 15cd)$ or $9c(p + qd)$ where p and q are non-zero integers or $(2 - 5d)$ as a factor)
	(b)	eg $5 - 2x = 18x - 24$ or $\frac{5}{6} - \frac{2}{6}x = 3x - 4$		3	M1	for removal of the fraction and correctly multiplying out RHS by 6 in an equation or separating fractions on the LHS in an equation
		$5 + 24 = 18x + 2x$ oe or $29 = 20x$ oe or $\frac{5}{6} + 4 = \frac{2}{6}x + 3x$ oe			M1ft	dep on 4 terms for correctly rearranging their 4 term equation for terms in x on one side of the equation and number terms on the other
		<i>Working required</i>	1.45		A1	dep on M1 oe eg $\frac{29}{20}$ or $1\frac{9}{20}$
					Total 5 marks	

18	eg $2 \times 2 \times 350$ or $2 \times 7 \times 100$ or $2 \times 5 \times 140$ or $5 \times 5 \times 56$ or $7 \times 5 \times 40$ or $(14 \times 100 = 14 \times 25 \times 4 =) 2 \times 7 \times 25 \times 4$		3	M1 for finding 2 prime factors after at least 2 stages of prime factorisation with 0 incorrect stages or for finding 2 prime factors after at least 3 stages of prime factorisation with no more than 1 incorrect stage Each stage gives 2 factors – may be in a factor tree or a table or listed (see LHS for examples of the amount of work needed for the award of this mark) but we want to see 2 prime factors. Example of finding 2 prime factors after at least 3 stages with 1 incorrect stage: $1400 = 10 \times 14 = 2 \times 5 \times 2 \times 7$										
	eg <table border="1" style="display: inline-table; margin-right: 20px;"> <tr><td>2</td><td>1400</td></tr> <tr><td>2</td><td>700</td></tr> <tr><td></td><td>350</td></tr> </table> eg <pre> 1400 / \ 2 700 / \ 2 350 </pre>	2		1400	2	700		350						
	2	1400												
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eg $2 \times 2 \times 2 \times 5 \times 5 \times 7$														
eg <table border="1" style="display: inline-table; margin-right: 20px;"> <tr><td>2</td><td>1400</td></tr> <tr><td>2</td><td>700</td></tr> <tr><td>2</td><td>350</td></tr> <tr><td>5</td><td>175</td></tr> <tr><td>5</td><td>35</td></tr> <tr><td></td><td>7</td></tr> </table> eg <pre> 1400 / \ 2 700 / \ 2 350 / \ 2 175 / \ 5 35 / \ 5 7 </pre>	2	1400	2	700	2	350	5	175	5	35		7		
2	1400													
2	700													
2	350													
5	175													
5	35													
	7													
	Working required	$2^3 \times 5^2 \times 7$	M1 dep on M1 for factors 2, 2, 2, 5, 5, 7 identified with no others in any form, eg listed, multiplied, added Ignore 1s May be seen in a fully correct factor tree or ladder A1 dep on M2 May be in any order and allow $2^3 \times 5^2 \times 7$											
Total 3 marks														

19	eg $\begin{array}{r} 3x + 2y = 10 \\ - 3x - 4y = 16 \\ \hline (6y = -6) \end{array}$ or eg $3\left(\frac{10 - 2y}{3}\right) - 4y = 16$ or $3\left(\frac{16 + 4y}{3}\right) + 2y = 10$ or $6y = -6 \text{ oe}$	Eg $\begin{array}{r} 6x + 4y = 20 \\ + 3x - 4y = 16 \\ \hline (9x = 36) \end{array}$ or eg $3x - 4\left(\frac{10 - 3x}{2}\right) = 16$ or $3x + 2\left(\frac{3x - 16}{4}\right) = 10$ or $9x = 36 \text{ oe}$		3	M1 a correct method to eliminate x or y : coefficients of x or y are the same and the correct operation to eliminate is selected; if operator not written, the correct operation can be implied by 2 out of 3 terms correct Allow one arithmetic error if multiplying to equate coefficients or for a correct substitution of one variable into the other equation NB: the mark is for the method and not for the result of the method. However, if the correct result of this method is seen, the mark can be awarded	
	$3x + 2 \times \text{"-1"} = 10$ or $3x - 4 \times \text{"-1"} = 16$ or $x = \frac{10 - 2 \times \text{"-1"}}{3}$ or $x = \frac{16 + 4 \times \text{"-1"}}{3}$	$3 \times \text{"4"} + 2y = 10$ or $3 \times \text{"4"} - 4y = 16$ or $y = \frac{10 - 3 \times \text{"4"}}{2}$ or $y = \frac{3 \times \text{"4"} - 16}{4}$				M1 dep on M1 a correct substitution to find the value of the second variable using their value or for starting again with elimination or substitution (as above)
	<i>Working required</i>		$x = 4$ $y = -1$			A1 dep on M1
					Total 3 marks	

20	(a)		Vertices at (2, 5) (2, 8) (3, 6) (3, 7)	2	B2 for correct shape in correct position (B1 for correct orientation of shape but wrong position or for 3 out of 4 vertices correct or for $y = x$ drawn)
	(b)		Vertices at (5, 3) (5, 7) (7, 7) (9, 3)	2	B2 for correct shape in correct position (B1 for correct size and orientation of shape but wrong position or for 3 out of 4 vertices correct)
					Total 4 marks

21	$45 \div 1.5 (= 30)$ or $5 \times 12 (= 60)$ or $\frac{64}{1.5} \left(= \frac{128}{3} = 42.6(6\dots) \right)$		5	M1 for a method to find the number of boxes needed or the cost of adhesive or cost of tiles per m ²
	“30” × 64 (= 1920) or “42.6(6...)” × 45 (=1920)			M1 for a method to find the cost of the boxes of tiles
	“1920” + “60” (= 1980) or 3000 – 1920 – 60 (=1020)			M1 for a method to find the total cost or the profit
	eg $\frac{3000 - \text{"1980"}}{\text{"1980"}} (= 0.515\dots)$ or $\frac{3000 - \text{"1980"}}{\text{"1980"}} \times 100$ or $\frac{3000}{\text{"1980"}} (= 1.515\dots)$ or $\frac{3000}{\text{"1980"}} \wedge 100 (= 151.5\dots)$ or $\frac{3000}{\text{"1980"}} \times 100 - 100$			M1 for a method to find the percentage profit or be one step away
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	51.5		A1 awrt 51.5 SCB3 for answer 56.3 or 56.25 (from use of 1920 instead of 1980 as total cost)
				Total 5 marks

22	(a)		1	1	B1 cao
	(b)	eg $(5^9 \div 5^{-3} =) 5^6$ or $(5^9 \cdot 5^{-2} =) 5^{11}$ or $(5^{-3} \cdot 5^{-2} =) 5^{-1}$ or $(5^k \div 5^{-2} =) 5^{k-2}$ or $9 - 3 = k - 2$ oe or $9 - 3 - -2$ or $9 - 3 + 2$ <i>Correct answer scores full marks (unless from obvious incorrect working)</i>	8	2	M1 for one correct application of an index rule (must be seen in powers of 5) this could be after an initial mistake – working will need to be clearly seen or for forming a correct equation in the indices alone or for a complete method for the value of k
	(c)		$8d^{12}e^{15}$	2	B2 for a correct answer (B1 for answer of the form $kd^m e^n$ where at least two of $k = 8$, $m = 12$ and $n = 15$ are correct)
Total 5 marks					

23		$10.5 = \frac{48.3}{v}$ or $10.5v = 48.3$ or $(v =) \frac{48.3}{10.5}$		2	M1 oe for substituting 10.5 and 48.3 correctly into a correct formula for density; may use any letter for the volume
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	4.6		A1 allow $\frac{23}{5}$ or $4\frac{3}{5}$ oe
Total 2 marks					

24		$60 \times 7 (= 420)$ or $46 \times 3 (= 138)$		3	M1 may be embedded within an equation
		“420” – “138” (= 282)			M1 for a method to find the sum of the 4 numbers Allow this mark if they do further incorrect work using 282
		<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	70.5		A1 allow $\frac{141}{2}$ oe eg $\frac{282}{4}$ or $70\frac{1}{2}$
Total 3 marks					

25	$1 - 0.15 (= 0.85)$ or $100(\%) - 15(\%) (= 85(\%))$ or $\frac{612}{85} (= 7.2)$ oe		3	M1 may be seen embedded Do not allow $(1 - 15\%)$ unless processed correctly
	$612 \div "0.85"$ oe or $612 \div "85" \times 100$ oe or $"7.2" \times 100$			M1 for a complete method
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	720		A1
				Total 3 marks

26	eg $y = -5x (+k)$ or $y - a = -5(x - b)$ or eg $y = mx + 6$ or $y - 6 = m(x - 0)$ or eg $-5x + 6$ or $L = -5x + 6$		2	M1 for the equation of any line with gradient -5 other than $y = 2 - 5x$ or for the equation of any line passing through the point $(0, 6)$ or the correct line missing 'y =' or with the wrong subject
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	$y = -5x + 6$		A1 oe equation eg $y = 6 - 5x$ or $y - 6 = -5(x - 0)$ or $y + 5x = 6$
				Total 2 marks

<p>27</p>	<p>$(AD^2 =) 28^2 + 45^2 (= 784 + 2025 = 2809)$ or $(EDA =) \tan^{-1}\left(\frac{28}{45}\right) (= 31.8(9\dots))$ or $(EAD =) \tan^{-1}\left(\frac{45}{28}\right) (= 58.1(09\dots))$</p>		5	<p>M1 for a correct method to find AD^2 or angle EDA or angle EAD</p>
	<p>eg $(AD =) \sqrt{28^2 + 45^2} (= \sqrt{784 + 2025} = \sqrt{2809} = 53)$ oe or $(AD =) \frac{28}{\sin 31.8(9\dots)} (= 53\dots)$ or $(AD =) \frac{45}{\cos 31.8(9\dots)} (= 53\dots)$ oe or $(AD =) \frac{45}{\sin 58.1\dots} (= 53\dots)$ or $(AD =) \frac{28}{\cos 58.1\dots} (= 53\dots)$ oe</p>			<p>M1 for a correct method to find AD</p>
	<p>eg $(BC =) \sqrt{35^2 - ("53" - 21)^2} (= \sqrt{1225 - 1024} = \sqrt{201} = 14.1(7\dots))$ or $(BDC =) \cos^{-1}\left(\frac{"53" - 21}{35}\right) (= 23.8(9\dots))$ or $(BCD =) \sin^{-1}\left(\frac{"53" - 21}{35}\right) (= 66.1\dots)$</p>			<p>M1 for correct method to find BC or angle BDC or angle BCD</p>
	<p>eg $\frac{1}{2} \wedge "14.1(7\dots)" \wedge ("53" - 21) (= 16\sqrt{201})$ or $\frac{1}{2} \wedge 35 \wedge ("53" - 21) \wedge \sin("23.8(9\dots)")$ or $\frac{1}{2} \wedge 35 \wedge "14.1(7\dots)" \wedge \sin("66.1\dots")$</p>			<p>M1 for a correct method to find the area of triangle CDB</p>
	<p><i>Correct answer scores full marks (unless from obvious incorrect working)</i></p>	227		<p>A1 awrt 227 accept $16\sqrt{201}$</p>
			Total 5 marks	

