Pearson Edexcel

Mark Scheme (Results)

Summer 2025

Pearson Edexcel International GCSE
In Mathematics A Modular (4WM1F) Paper 01
Unit 1F 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
- eeoo – 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)		725	1	B1 cao
(b)		32	1	B1 cao
(c) (i)		4578	1	B1 cao
(ii)		8754	1	B1 cao
				Total 4 marks

2 (i)		impossible	1	B1	allow incorrect spelling if meaning is clear
(ii)		evens	1	B1	allow incorrect spelling if meaning is clear
(iii)		unlikely	1	B1	allow incorrect spelling if meaning is clear
					Total 3 marks

3 (a)		42	1	B1	
(b)		obtuse circled	1	B1	allow clearly indicated
(c)		octagon	1	B1	allow incorrect spelling if meaning is clear
(d)		5.3	1	B1	allow 5.3(000….)
(e)		470	1	B1	allow 470(.000)
					Total 5 marks

4 (a)		(–1, 2)	1	B1	cao
(b)		(1, 3)	2	B2	(B1 for (1, …) or (…, 3) or (3, 1) or the midpoint clearly marked)
(c)		*P* marked correctly on grid	1	B1	cao
					Total 4 marks

5	(a)		60	1	B1	cao
	(b)		0.19	1	B1	
	(c)	$\frac{16}{20}$ oe eg $\frac{8}{10}$ or answer of $\frac{1}{5}$		2	M1	for a correct unsimplified fraction or answer of $\frac{1}{5}$ or 0.8 or 80% or for any fraction that will cancel written in simplest form eg $\frac{15}{20}=\frac{3}{4}$ or $\frac{4}{16}=\frac{1}{4}$
		Correct answer scores full marks (unless from obvious incorrect working)	$\frac{4}{5}$		A1	cao NOTE: do not ISW eg $\frac{4}{5}$ then answer of 0.8 or 80% is M1A0
						Total 4 marks

6	(a)		6	1	B1	cao
	(b)		48	1	B1	cao
						Total 2 marks

7	$\frac{1}{4}\times 26.8\,(=6.7)$ oe **or** $\frac{3}{4}\times 26.8\,(=20.1)$ oe **or** $2\times 26.8\,(=53.6)$		4	M1	for method to find the discount off one calculator **or** the reduced price of one calculator **or** the cost of two calculators
	"6.7" × 3 × 2 (= 40.2) oe eg (26.8 – "6.7") × 2 (= 40.2) **or** "20.1" × 2 (= 40.2) **or** $"53.6"-\frac{1}{4}\times"53.6"\left(=40.2\right)$ oe **or** $\frac{3}{4}\times"53.6"\left(=40.2\right)$ oe			M1	for method to find the reduced price of two calculators
	50 – "40.2"			M1	for a complete method
	Correct answer scores full marks (unless from obvious incorrect working)	9.8(0)		A1	SCB2 for an answer of 29.9(0) **or** 36.6(0) SCB1 for an answer of 23.2(0) **or** ±3.1(0)
					Total 4 marks

8	(a)		–5, –3, (–1), 1, 3, (5)	2	B2 (B1	for all correct values in the table for 2 or 3 correct values)
	(b)			2	M1ft	for at least 5 points plotted correctly (within the circles on the overlay) ft their incorrect table (provided B1 scored in part (a)) **or** for correct line segment through at least 3 of (−2, −5) (−1, −3) (0, −1) (1, 1) (2, 3) (3, 5) **or** for a straight line with gradient 2 **or** for a straight line through (0, –1) with a positive gradient
		Correct answer scores full marks (unless from obvious incorrect working)	Correct line drawn		A1	for a correct line between $x = -2$ and $x = 3$ (clear intention to go through all the points and which must be a line – allow freehand) Ignore to the left of $x = -2$ and to the right of $x = 3$ (**Note**: If a fully correct graph is shown, but a blank table is shown in (a), then award 2 marks for (a) and 2 marks for (b))
						Total 4 marks

9	(a)	86 + 104 + 104 (= 294) or 360 – 86 – 104 – 104 or 180 – 104 – (86 ÷ 2) (= 33)		2	M1	for summing 3 other angles or subtracting other 3 angles from 360 or a correct method to find 0.5*x*
		Correct answer scores full marks (unless from obvious incorrect working)	66		A1	cao
	(b)	$y + y + 118 = 180$ or $\frac{180-118}{2}$		2	M1	a correct equation in *y* or a correct calculation for *y*
		Correct answer scores full marks (unless from obvious incorrect working)	31		A1	cao
						Total 4 marks

10	(a)		68	1	B1	cao
	(b)	0.8, 0.75, 0.7, 0.625 (0.63), 0.65 80%, 75%, 70%, 62.5% (63%), 65%		2	M1	for all numbers written as decimals or percentages or for only one error in the list given in their final answer eg $\frac{7}{10}, \frac{5}{8}, \frac{13}{20}, \frac{3}{4}, \frac{4}{5}$
		Correct answer scores full marks (unless from obvious incorrect working)	$\frac{5}{8}, \frac{13}{20}, \frac{7}{10}, \frac{3}{4}, \frac{4}{5}$		A1	correct list – may be written as fractions, decimals or percentages eg 0.625 (0.63), 0.65, 0.7, 0.75, 0.8 or 62.5% (63%), 65%, 70%, 75%, 80%
	(c)		$3 + 1 + (\frac{1}{8} + \frac{3}{8}) \div \frac{1}{2} = 5$	1	B1	for brackets in the right place
						Total 4 marks

11		*CE, CS, CG, TE, TS, TG, WE, WS, WG*	2	B2	for all correct combinations with no repeats and no incorrect combinations. (B1 for at least 4 correct combinations ignoring repeats or incorrect combinations)
					Total 2 marks

12	$\frac{13.09}{.....}$ or $\frac{.....}{1.82}$ or 7.19 or 7.192 or $\frac{1309}{182}$ or $\frac{187}{26}$		2	M1	for 13.09 oe or 1.82 oe or 7.19 or 7.192 or $\frac{1309}{182}$ or $\frac{187}{26}$
	Correct answer scores full marks (unless from obvious incorrect working)	7.1923(07692…)		A1	for at least 4 decimal places
					Total 2 marks

13	eg $\frac{12}{28}$ and $\frac{7}{28}$ **or** $\frac{12n}{28n}$ and $\frac{7n}{28n}$ **or** 4×3 (= 12) **and** $(1 \times) 7$ **and** 4×7 (= 28) **or** $\frac{3\times4}{4\times7}$ and $\frac{(1\times)7}{4\times7}$		2	M1	for finding a common denominator with at least one fraction correct **or** for calculations that would lead to 12 **and** 7 **and** 28
	$\frac{12}{28}+\frac{7}{28}=\frac{19}{28}$ **or** $\frac{12n}{28n}+\frac{7n}{28n}=\frac{19n}{28n}=\frac{19}{28}$ **or** 12 + 7 = 19 **and** $\frac{19}{28}$ **or** $4 \times 3 + (1 \times) 7$ (= 19) **and** 4×7 (= 28) **and** $\frac{19}{28}$ **or** $\frac{3\times4+(1\times)7}{4\times7}=\frac{19}{28}$ **or** $\frac{3\times4}{4\times7}+\frac{(1\times)7}{4\times7}=\frac{19}{28}$ *Working required*	Shown		A1	dep on M1, for a complete correct method leading to $\frac{19}{28}$
					Total 2 marks

14	(a)		17	1	B1	cao
	(b)			2	M1	for $\frac{6}{m}$ where $m > 6$ **or** $\frac{n}{25}$ where $n < 25$ **or** answer of 6 : 25 **or** 6 out of 25
		Correct answer scores full marks (unless from obvious incorrect working)	$\frac{6}{25}$		A1	oe eg 0.24, 24%
						Total 3 marks

15	(a)			**1**	**2**	**3**	**4**	**5**	**6**	
			1	2	3	*4*	*5*	6	7	
			3	4	*5*	*6*	7	8	9	
			5	*6*	*7*	8	9	10	11	
	(b)(i)							$\frac{4}{18}$	1	B1ft oe eg $\frac{2}{9}$ or 0.22…. or 22(.22…)% ISW incorrect cancelling or rounding *Eg* $\frac{4}{18}$ = 0.2 award B1
	(ii)							$\frac{5}{18}$	1	B1ft oe eg 0.27(77…) or 27(.77…)% or 0.28 or 28% ISW incorrect cancelling or rounding Eg $\frac{5}{18}$ = 0.3 award B1 Penalise incorrect notation once only eg (i) 4 : 18 (ii) 5 : 18 scores B0B1 eg (i) 4 out of 18 (ii) 5 out of 18 B0B1
										Total 4 marks

16	(a)		$3(3e + 4g)$	1	B1	
	(b)	$x^2 + 5x$ or $6x - 12$		2	M1	for one bracket expanded correctly
			$x^2 + 11x - 12$		A1	ISW if correct answer seen first eg re-factorising into brackets $x^2 + 11x - 12$ $=(x + 12)(x - 1)$ Do not ISW if size of expression is changed. eg $x^2 + 11x - 12$ $= x^2 - 1x$
						Total 3 marks

17	$5560 \div 8$ oe eg $\frac{5560}{(8 \times 60)} \times 8$		2	M1	allow M1 for $\frac{5\ 560\ 000}{480}$ Allow for any distance equivalent to 5560 km divided by a time equivalent to 8 hours
	Correct answer scores full marks (unless from obvious incorrect working)	695		A1	do not ISW eg $\frac{5560}{8} \times 60$
					Total 2 marks

18	eg 6×8 (= 48) **or** $\frac{1}{2} \times 6 \times 3 (= 9)$ **or** $\frac{1}{2} \times \frac{6}{2} \times 3 (= 4.5)$ **or** $\frac{1}{2} \times (11 + 8) \times 3 (= 28.5)$			4	M1 for a correct method to find one relevant area
	eg "48" + "9" (= 57) **or** "48" + "4.5" + "4.5" (= 57) **or** "28.5" × 2 (= 57)	**or** eg "48" ÷ 4 (= 12) **or** "9" ÷ 4 (= 2.25 or 3) **or** "4.5" ÷ 4 (= 1.125) **or** "28.5" ÷ 4 (= 7.125)			M1 **from this mark onwards follow either left hand column or right hand column** **left hand column** for a complete method to find the total area **or** **right hand column** a correct method to find the number of tins of paint for part of the stage
	eg "57" ÷ 4 (= 14.25) **or** their area ÷ 4 eg total area = 66 **and** 66 ÷ 4 (= 16.5) **or** 15 × 4 (= 60) **or** using multiples of 4 for their area eg total area = 66 **and** 17 × 4 (= 68)	eg "12" + "2.25"(= 14.25) **or** "12" + "1.125" + "1.125" (= 14.25) **or** 2 × "7.125" (= 14.25)			M1 **left hand column** (indep) for a method to find the number of tins for their area ft from any value that has come from a calculation that includes at least 2 of the given dimensions **or** **right hand column** method to find the total number of tins of paint by adding number of tins from the parts of the stage
	Working required		15		A1 dep on M2, must be from correct working
					Total 4 marks

19	$\frac{11}{3}(\times)\frac{18}{7}$		3	M1	for both fractions written as improper fractions
	$\frac{11}{3}\times\frac{18}{7}=\frac{198}{21}$ or $\frac{77}{21}\times\frac{54}{21}=\frac{4158}{441}$ $\frac{11}{\cancel{3}^{1}}\times\frac{\cancel{18}^{6}}{7}=\frac{66}{7}$ oe			M1	for multiplying the numerators and denominators **or** cancelling the fractions and then multiplying numerators and denominators
	eg $\frac{11}{3}\times\frac{18}{7}=\frac{198}{21}=\frac{66}{7}=9\frac{3}{7}$ oe or $\frac{11}{3}\times\frac{18}{7}=\frac{198}{21}=9\frac{9}{21}=9\frac{3}{7}$ oe $\frac{11}{\cancel{3}^{1}}\times\frac{\cancel{18}^{6}}{7}=\frac{66}{7}=9\frac{3}{7}$ oe *Working required*	Correct working leading to correct answer of $9\frac{3}{7}$		A1	Completion to given simplest form. dep on M2 **All working must be shown clearly as requested in the question as this is a reasoning question testing working without the use of a calculator**
					Total 3 marks

20	(a)		17.75	1	B1	cao
	(b)		147.5	1	B1	Allow $147.4\dot{9}$ for 147.5
	(c)	$\frac{5\times800}{0.4}$		2	M1	for 2 of the numbers correctly rounded to one significant figure (numbers do not need to be in the correct sum if it is clear that they have been rounded correctly)
		Working required	10 000		A1	dep on all figures correctly rounded
						Total 4 marks

21	$0.14 + 0.23 + 2x + 0.18 + 7x = 1$ oe or $1 - 0.14 - 0.23 - 0.18$ (=0.45) oe or 0.14×500 (= 70) or 0.23×500 (= 115) or 0.18×500 (= 90) or $(0.14 + 0.23 + 0.18) \times 500$ (= 275) oe eg 0.55×500 (= 275) or $7x \times 500 (= 3500x)$		4	M1	Correct use of probabilities total 1 or correct calculation for an estimate for number of times the spinner will land on any colour or the algebraic expression for the expected number of blue outcomes
	"0.45" ÷ "9" (= 0.05) or $"0.45" \times \frac{7}{"9"} (= 0.35)$ or $"0.45" \times \frac{2}{"9"} (= 0.1(0))$ or 500 – 70 – 115 – 90 (= 225) oe eg 500 – 275 (= 225) or "0.45" × 500 (= 225) or eg $"3500"x + "1000"x + "70" + "115" + "90" = 500$ oe			M1	A completely correct method to find the value of x Sight of 0.35 implies this method mark or a completely correct method to find the number of times the spinner will land on red or blue or for a correct algebraic equation for the expectancies
	eg $("0.05" \times 7) \times 500 (= 175)$ oe or $("0.05" \times 2) \times 500 (= 50)$ oe eg $"0.35" \times 500$ or $"0.1" \times 500$ $\frac{"225"}{"9"} \times 7$ oe eg "25" × 7 or $\frac{"225"}{"9"} \times 2$ or "25" × 2 $\frac{"225"}{"4500"} \times "3500"$ oe or $\frac{"225"}{"4500"} \times "1000"$ oe			M1	a correct method to find the estimate for $7x$ or $2x$ or an answer leading from 175 seen eg $\frac{175}{500}$
	Correct answer scores full marks (unless from obvious incorrect working)	175		A1	
					Total 4 marks

22	$\frac{15\times 20}{2}(=150)$		3	M1	use of the correct figures for area of the triangle The first two M1 marks can be awarded in either order
	$\frac{\pi\times 4^2}{2}(=8\pi=25.1...)$			M1	(indep) for a correct method to find the area of the semicircle using correct figures allow use of 3.14... or $\frac{22}{7}$ for π The first two M1 marks can be awarded in either order
	Correct answer scores full marks (unless from obvious incorrect working)	125		A1	awrt 125
					Total 3 marks

23	(a)		12	1	B1	accept x^{12}
	(b)		5	1	B1	accept y^5
	(c)		$125a^{12}r^6$	2	B2	for $125a^{12}r^6$ (B1 for a product in the form ka^pr^q where 2 from k, p or q are correct eg $5a^{12}r^6$ Allow $125a^{12}$ or $125r^6$ or $a^{12}r^6$ so as long as not added to any other terms)
						Total 4 marks

24	$(x =)\ 65 = \frac{702}{6x}$ or $702 \div 65 (= 10.8)$ or $6x = 10.8$		3	M1	For using the given formula correctly $65 = \frac{702}{area}$ scores M0 unless recovered by writing down $702 \div 65$ NB: We will condone x^2 being used in these calculations for this M mark eg $65 = \frac{702}{6x^2}$
	$(x =) \frac{702}{6 \times 65}$ or $(x =) \frac{702}{390}$ or "10.8" $\div 6$ or			M1	For a correct method to find x (If a student goes straight to this stage they gain M2) NB: We will **not** award for x^2 being used in these calculations or as eg $x^2 = \frac{702}{6 \times 65}$
	Correct answer scores full marks (unless from obvious incorrect working)	1.8		A1	oe $1\frac{4}{5}$ or $\frac{9}{5}$ do not ignore subsequent working eg 1.8/2 = 0.9 on answer line
					Total 3 marks

25 (a)	$6x - 24 = 3 + 2x$ **or** $x - 4 = \frac{3}{6} + \frac{2}{6}x$ oe		3	M1	for correct removal of fraction and expansion of bracket in a correct equation **or** separating fraction (RHS) in an equation
	$6x - 2x = 3 + 24$ **or** $4x = 27$ **or** $-24 - 3 = 2x - 6x$ **or** $-27 = -4x$ oe **or** $x - \frac{2}{6}x = \frac{3}{6} + 4$ oe **or** $-4 - \frac{3}{6} = \frac{2}{6}x - x$ oe			M1ft	(dep on 4 terms) correctly rearranging their 4 term equation for terms in x on one side of equation and number terms on the other
	Working required	$\frac{27}{4}$		A1	oe eg 6.75 or $6\frac{3}{4}$, dep on M1
(b)(i)	$(y \pm 6)(y \pm 5)$ **or** $(6 \pm y)(5 \pm y)$ **or** $y(y - 6) - 5(y - 6)$ **or** $y(y - 5) - 6(y - 5)$		2	M1	for $(y \pm 6)(y \pm 5)$ **or** $(6 \pm y)(5 \pm y)$ **or** for $(y + a)(y + b)$ where $ab = 30$ or $a + b = -11$ **or** $y(y + a) + b(y + a)$ or $y(y + b) + a(y + b)$ where $ab = 30$ or $a + b = -11$
	Correct answer scores full marks (unless from obvious incorrect working)	$(y - 6)(y - 5)$		A1	oe, allow any letter for y
(ii)		$(y =) 6, (y =) 5$	1	B1	must ft from their answer in (b)(i) ft from their factors in the form $(y + a)(y + b)$
					Total 6 marks

26	(a)		19, 23, 25, 29	2	B2 (B1	with no repeats for the set $A \cup B$ = 18, 20, 21, 22, 24, 26, 27, 28, 30 or for 3 correct values out of no more than 4 values or the 4 values with one repeat or 5 values with 4 correct)
	(b)		Correct explanation with no incorrect statements	1	B1	eg 30 is in the set $B \cap C$ or 30 is in both or 30 is in common or Both A and B contain 30
	(c)		eg 18, 25, 26, 27, 29	2	B2 (B1	for 18, 26 with 3 odd values from the universal set for a set of 5 values with one incorrect)
						Total 5 marks

27	(a)		0	1	B1	cao
	(b)	eg $\frac{8^7}{8^{12}}$ or $8^{-16} \times 8^{11}$ or $8^{-4} \times 8^{-1}$ etc or $-4 + 11 - 12$ (=n) oe		2	M1	for use of one index rule allow $8^{-4+11-12} = 8^n$ oe follow through a correct index rule seen after an incorrect eg $\frac{8^{-15}}{8^{12}}$ leading to 8^{-27} Index rules need to be written as powers of 8 **or** a correct expression for n (could be in two parts eg -4+11 = 7 (so) 7-12 (= n))
		Correct answer scores full marks (unless from obvious incorrect working)	–5		A1	allow 8^{-5}
						Total 3 marks

28	eg $12\sin 60\left(=6\sqrt{3}=10.3(9...)\right)$ **or** $\sqrt{12^2-"6"^2}\left(=6\sqrt{3}=10.3(9...)\right)$ **or** (Area *ADC* =) $\frac{1}{2}\times 12\times 47\times\sin 60 (=244.2...)$		5	M1	for a method find the height of the trapezium **or** the area of triangle *ADC* The first two M1 marks can be awarded in either order
	eg $12\cos 60(=6)$ **or** $\sqrt{12^2-\left("6\sqrt{3}"\right)^2}(=6)$			M1	(indep) for a method find the base of the triangle, condone missing brackets around $"6\sqrt{3}"$ The first two M1 marks can be awarded in either order
	eg (*AB* =) 47 – "6" – "6" (= 35)			M1	(dep on previous M1) for method to find the length of *AB*
	eg (Trapezium =) $\frac{1}{2}\times(47+"35")\times"10.3(9...)"$ **or** (Rectangle + 2 × Triangle =) $"35"\times"10.3(9...)"+2\times\frac{1}{2}\times"6"\times"10.3(9...)"$ **or** (Rectangle + 2 × Triangle =) $"35"\times"10.3(9...)"+2\times\frac{1}{2}\times"6"\times 12\times\sin 60$ **or** (Triangle *ADC* + Triangle *ABC* =) $"244.2..."+\frac{1}{2}\times 12\times"35"\times\sin 120$ oe eg $(47-"6")\times"10.3(9...)"$			M1	for a complete method There are other methods and marks should be awarded for a complete method that should give the correct area
	Working required	426		A1	(dep on M1) allow 420 – 427 from correct working
					Total 5 marks

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