Pearson

Mark Scheme (Results)

November 2023

Pearson Edexcel GCSE
In Mathematics (1MA1)
Foundation (Non-Calculator) Paper 1F

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November 2023
Question Paper Log Number P69525A
Publications Code 1MA1_1F_2311_MS

General marking guidance

These notes offer general guidance, but the specific notes for examiners appertaining to individual questions take precedence.

1 All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first. Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification/indicative content will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the response should be sent to review.

2 All the marks on the mark scheme are designed to be awarded; mark schemes should be applied positively. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no 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.

Questions where working is not required: In general, the correct answer should be given full marks.
Questions that specifically require working: In general, candidates who do not show working on this type of question will get no marks – full details will be given in the mark scheme for each individual question.

3 Crossed out work

This should be marked **unless** the candidate has replaced it with an alternative response.

4 Choice of method

If there is a choice of methods shown, mark the method that leads to the answer given on the answer line.
If no answer appears on the answer line, mark both methods **then award the lower number of marks.**

5 Incorrect method

If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review for your Team Leader to check.

6 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working as you can check the answer, but if ambiguous do not award.
Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

7 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 or its context. (eg an incorrectly cancelled fraction when the unsimplified fraction would gain full marks).
It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect (eg. incorrect algebraic simplification).

8 Probability

Probability answers must be given as a fraction, percentage or decimal. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).
Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.
If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

9 Linear equations

Unless indicated otherwise in the mark scheme, full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously identified in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded (embedded answers).

10 Range of answers

Unless otherwise stated, when an answer is given as a range (eg 3.5 – 4.2) then this is inclusive of the end points (eg 3.5, 4.2) and all numbers within the range

11 Number in brackets after a calculation

Where there is a number in brackets after a calculation eg 2 × 6 (=12) then the mark can be awarded **either** for the correct method, implied by the calculation **or** for the correct answer to the calculation.

12 Use of inverted commas

Some numbers in the mark scheme will appear inside inverted commas eg "12" × 50 ; the number in inverted commas cannot be any number – it must come from a correct method or process but the candidate may make an arithmetic error in their working.

13 Word in square brackets

Where a word is used in square brackets eg [area] × 1.5 : the value used for [area] does **not** have to come from a correct method or process but is the value that the candidate believes is the area. If there are any constraints on the value that can be used, details will be given in the mark scheme.

14 Misread

If a candidate misreads a number from the question. eg uses 252 instead of 255; method or process marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review.

Guidance on the use of abbreviations within this mark scheme	
M	method mark awarded for a correct method or partial method
P	process mark awarded for a correct process as part of a problem solving question
A	accuracy mark (awarded after a correct method or process; if no method or process is seen then full marks for the question are implied but see individual mark schemes for more details)
C	communication mark awarded for a fully correct statement(s) with no contradiction or ambiguity
B	unconditional accuracy mark (no method needed)
oe	or equivalent
cao	correct answer only
ft	follow through (when appropriate as per mark scheme)
sc	special case
dep	dependent (on a previous mark)
indep	independent
awrt	answer which rounds to
isw	ignore subsequent working

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	6	B1	cao	
2	31	B1	cao	
3	12*a*	B1		
4	40	B1	accept answer in the range 38 to 42	
5	60	B1	cao	
6	2300	P1 P1 A1	for converting to millilitres or litres eg 3 × 1000 (= 3000) **or** 700 ÷ 1000 (= 0.7) for finding the difference eg [3000] – 700 **or** 3 – [0.7] (= 2.3) accept 2.3 litres	Process marks may be awarded in either order [3000] comes from 3 × 1000 or can be 30 or 300 or 30000 [0.7] comes from 700 ÷ 1000 or can be 7 or 70
7 (a)	15	B1	cao	
(b)	4	B1	cao	

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8	(a)	11, 7, 6	B2 (B1	for all frequencies correct for two tallies or two frequencies correct)	Any discrepancy mark frequencies
	(b)	Castle	B1	Castle or ft their tallies or frequencies	Any discrepancy ft frequencies
	(c)	Bar chart	B1 M1 A1	for correct place labels or a linear scale for at least two correct bars ft their table in (a) for a fully correct bar chart with linear scale of numbers on the vertical axis and a set of place labels on the horizontal axis (ft from their frequencies or tallies in (a))	Accept key in place of labels Accept unambiguous abbreviations for labels eg C, F, M Condone bars of varying widths Condone no gaps or inconsistent gaps Bars must be unambiguously correct for their scale
9	(i)	$\frac{9}{22}$	B1	oe	If incorrect notation used in both (i) and (ii), penalise once only in (i)
	(ii)	$\frac{14}{22}$	B1	oe eg $\frac{7}{11}$	
	(iii)	0	B1		

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10	Yes **and** 750	P1 P1 C1	for beginning to work with proportion eg 60 ÷ 20 (= 3) **or** 900 – 250 (= 650) **or** 250 ÷ 20 (= 12.5 oe) **or** 900 ÷ 60 (= 15) for a complete process to see if there is enough peanut butter eg "3" × 250 (= 750) **or** 900 ÷ "3" (= 300) **or** "650" – 250 – 250 (= 150) oe **or** "12.5" × 60 (= 750) **or** for a complete process to work out how many cookies he can make eg 900 ÷ "12.5" (= 72) **or** for process to work out how much peanut butter is needed for one cookie and how much peanut butter he can use per cookie eg 250 ÷ 20 (= 12.5 oe) **and** 900 ÷ 60 (= 15) Yes **and** accurate figure to compare eg 750 (g needed) **or** 150 (g over) **or** 300 (g per batch available) **or** 72 (cookies can be made) **or** 12.5 (g peanut butter per cookie needed) **and** 15 (g peanut butter per cookie available)	Sugar = 600 (g) or Small eggs = 6 (eggs) implies P1 Sight of 750 gains P2
11	Diagram	M1 A1	for a correct base length (6 cm) drawn or correct height (9 cm) drawn **or** a fully correct enlargement of a scale factor not equal to 3 fully correct enlargement	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12 (a)(i)	26	M1	for substitution eg $2 \times 3 + 4 \times 5$ or $6 + 20$	
		A1	cao	
(ii)	13	M1	for substitution eg $38 = 2g + 4 \times 3$ **or** a complete numerical method eg $(38 - 4 \times 3) \div 2$ **or** for a correct first step to rearrange eg $P - 4h = 2g$ or $\frac{P}{2} = g + \frac{4h}{2}$ oe	
		A1	cao	
(b)	–11	M1	for $3 \times -3 = -9$ oe **or** a full substitution eg $(3 \times -3) - 2$	Condone absence of brackets
		A1	cao	
13	23	P1	for finding the number of scrunchies possible eg $100 \div 5$ (= 20) **or** the cost of 1 g of wool eg $300 \div 100$ (= 3)	
		P1	for working out the cost of wool per scrunchie eg $3 \div$ "20" (= 0.15) **or** $300 \div$ "20" (= 15) **or** "3" $\times 5$ (= 15) **or** the cost of all hair bands eg "20" $\times 8$ (= 160) **or** "20" $\times$ 0.08 (= 1.6(0))	Award of this mark implies the previous mark 460 implies P2
		P1	for complete process eg ("0.15" + 0.08) $\times 100$ **or** "15" + 8 **or** (300 + "160") $\div$ "20" **or** (3 + "1.6(0)") $\div$ "20" $\times 100$	
		A1	accept £0.23	

<table>
<tr><th colspan="4">Paper: 1MA1/1F</th></tr>
<tr><th>Question</th><th>Answer</th><th>Mark</th><th>Mark scheme</th><th>Additional guidance</th></tr>
<tr><td>14</td><td>Graph drawn</td><td>B3

(B2

(B1

</td><td>for a correct line between $x = -2$ and $x = 2$

for a correct straight-line segment through at least 3 of
$(-2, -9)$, $(-1, -5)$, $(0, -1)$, $(1, 3)$, $(2, 7)$

or for all these points plotted but not joined

or for a line drawn with a positive gradient through $(0, -1)$ and clear intention to use a gradient of 4, eg line through $(0, -1)$ and $(1, 3)$)

for at least 2 correct points stated or plotted

or for a line drawn with a positive gradient through $(0, -1)$

or a line with gradient 4)</td><td>Accept freehand line drawn

Ignore any incorrect points.

Table of values
<table><tr><td>x</td><td>−2</td><td>−1</td><td>0</td><td>1</td><td>2</td></tr><tr><td>y</td><td>−9</td><td>−5</td><td>−1</td><td>3</td><td>7</td></tr></table>
Ignore any incorrect points.
Coordinates may be in a table or working.
Do not accept $y = -1$ drawn</td></tr>
<tr><td>15</td><td>450</td><td>P1

P1

P1

A1</td><td>for working with percentage eg $12000 \times 25 \div 100$ (= 3000) oe
OR for splitting the cost of the car over 20 months eg $12000 \div 20$ (= 600)

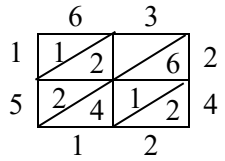
for finding the amount to pay in instalments eg 12000 – [deposit] (= 9000)
OR for splitting the cost of the deposit over 20 months
eg [deposit] ÷ 20 (= 150)
OR for finding 25% of the monthly cost eg “600” × 25 ÷ 100 (= 150) oe

for finding the amount required eg “9000” ÷ 20 or (12000 – [deposit]) ÷ 20
OR “600” – “150”

cao</td><td>

[deposit] can be 3000 or any figure that is identified by them as the deposit or 25% of 12000 calculated incorrectly.</td></tr>
</table>

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16	Explanation (supported)	M1	for method to find comparable figures eg 60 × 70 ÷ 100 **or** 45 ÷ 60 ×100 **or** 0.7 **or** 0.75	
		C1	for conclusion eg shows 42 (marks) **or** 75 (%) **or** 0.7 **and** 0.75	Figures need not be supported by words but must not be contradicted.
17	$3\frac{3}{5}$	M1	for inverting to give $\frac{3}{5}\times 6$ oe **OR** for two correct fractions with a common denominator eg $\frac{18}{30}\div\frac{5}{30}$	
		M1	for method to calculate eg $\frac{3\times 6}{5}$ or $\frac{3\times 30}{5\times 5}$ or $\frac{18}{5}$ or $\frac{90}{25}$ oe	
		A1	for $3\frac{3}{5}$ or any other equivalent mixed number eg $3\frac{15}{25}$	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	15.12	M1	for a complete method with relative place value correct including an intention to add all the appropriate elements of the calculation	252 1260 1512  60 3 20 1200 60 4 240 12 1200 + 60 + 240 + 12 = 1512
		A1	for digits 1512	
		A1	(dep on M1) for correct placement of the decimal point into their final answer	
19 (a)(i)	1	B1	cao	
(ii)	$\frac{1}{25}$	B1	oe	
(b)	2^6	M1	for a correct first step using a rule of indices, eg 2^{5+4} (= 2^9) or 2^{5-3} (= 2^2) or 2^{4-3} (= 2^1) **or** for $2 \times 2 \times 2 \times 2 \times 2 \times 2$ or 64	
		A1	for 2^6	Accept $n = 6$

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20 (a)	$2^2 \times 3 \times 13$	M1	for a complete method to find prime factors; could be shown in a complete factor tree with no more than one error **or** by division by prime factors with no more than one error **or** for 2, 2, 3, 13 (1)	Condone the inclusion of 1 for this mark
		A1	$2^2 \times 3 \times 13$ **or** $2 \times 2 \times 3 \times 13$ oe	
(b)	26	M1	for a correct factor tree for 130 (or 156 if not credited in part (a)) with no more than one arithmetic error **or** for listing factors of 156 or 130, at least 4 correct for either (with no more than 1 incorrect in either list), could be in factor pairs **or** for the prime factors of 130 (2, 5, 13) (or 156 if not credited in part (a)). **or** identifies a common factor other than 1 (2 or 13)	Condone the inclusion of 1 for this mark 1, 2, 3, 4, 6, 12, 13, 26, 39, 52, 78, 156 1, 2, 5, 10, 13, 26, 65, 130
		A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21 (a)	3.5	P1 P1 A1	for a process to find the total length of the 5 sticks, eg 4.2×5 (= 21) **or** for forming an equation, eg $\frac{7+4x}{5} = 4.2$ for complete process to find the mean eg ("21" – 7) ÷ 4 oe	
(b)	Explanation	C1	for explanation **Acceptable examples** it reduced the mean my answer will be less the answer will be 1 it will be 2.5 less **Not acceptable examples** the mean will be more my answer will change it would decrease the lengths of the other sticks	If figures are given as part of the answer they must be correct, but can allow ft.
22	Angle constructed	C2 (C1	for fully correct construction with all arcs drawn for line drawn within guidelines with no (or incorrect) construction arcs or correct arcs drawn and no line seen)	Full marks cannot be awarded if no construction lines are seen

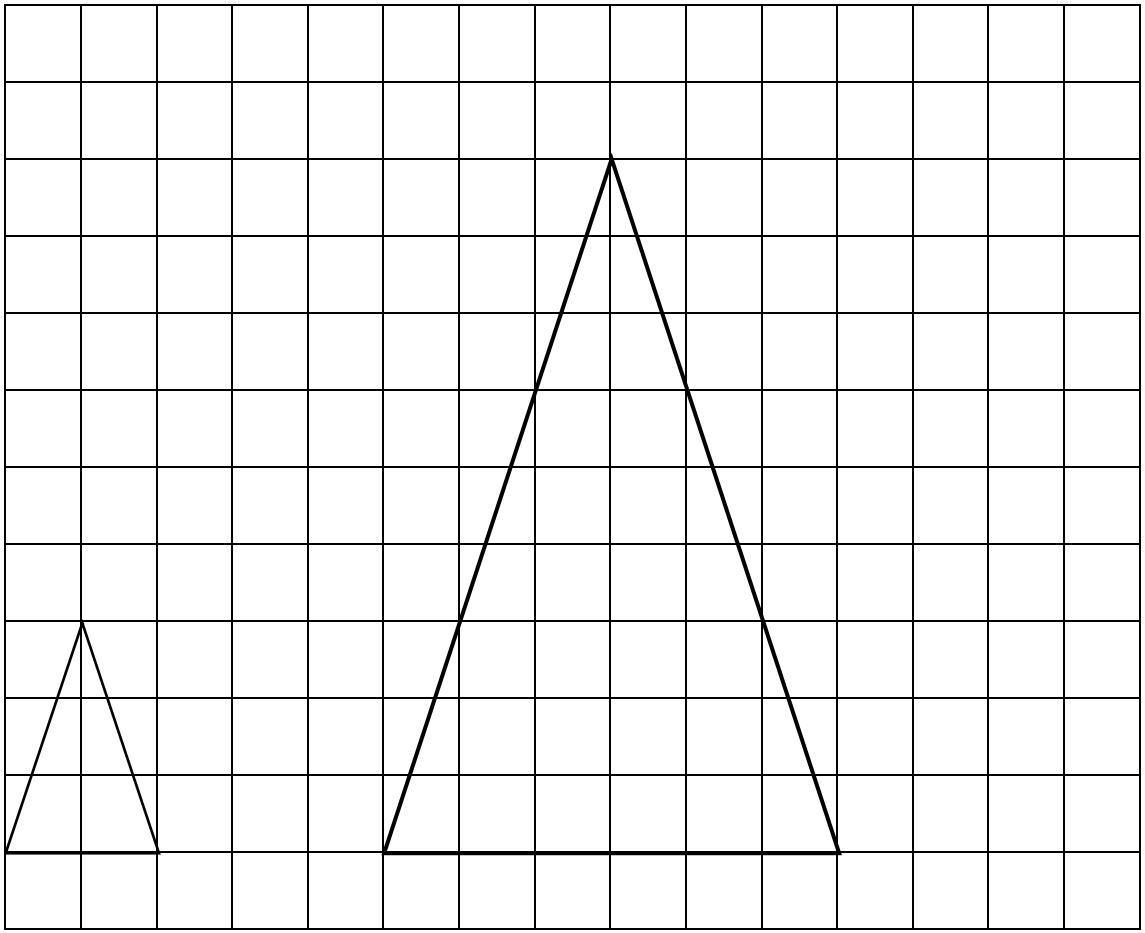
Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
23	144	P1 P1 P1 A1	for using the ratio, eg $x = 2y$ **or** $2y + 2y + y$ (= 180) **or** 2 + 2 + 1 (= 5 (parts)) for using angle facts to give an equation, eg $x + x + y = 180$ **or** $2y + 2y + y = 180$ **or** $y + w = 180$ **or** $5x \div 2 = 180$ oe **or** $w = 2x$ **or** for 180 ÷ 5 (= 36) for a complete process eg 180 – (180 ÷ 5) cao	The first two marks may be awarded in either order Award P2 for $x = 72$ or $y = 36$
24	2400	P1 P1 P1 P1 A1	for setting up an equation in x eg $x + (3x + 1) + (2x – 5) = 44$ **or** $6x – 4 = 44$ **or** $x = 48 \div 6$ (= 8) for substituting "8" into either $(3x + 1)$ or $(2x – 5)$ eg 3 × "8" + 1 (= 25) or 2 × "8" – 5 (= 11) for finding the mass of one book eg 7500 ÷ "25" (= 300) for finding the mass of the books on shelf **A** eg "300" × "8" cao	
25	2.7	M1 A1	for use of density = mass ÷ volume eg 27 ÷ 10 oe	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
26	160 to 200	M1 M1 A1	rounds one figure appropriately (6, 8, 0.25 or 0.3) (dep) for carrying out an accurate calculation using 0.25 or 0.3 eg $6 \div 0.3 = 20$, $8 \div 0.25 = 32$, $6 \div 0.25 = 24$ **or** digits 16 Answer in the range 160 to 200 from appropriate rounding	Do not award any marks for an accurate calculation if then rounded
27 (a)	$6x^2 - 11x - 10$	M1 A1	for expanding bracket to obtain 4 terms with all 4 correct without considering signs or for 3 terms out of 4 correct with correct signs cao	NB $6x^2 - 11x$ or $-11x - 10$ can be considered 3 terms out of 4 correct with correct signs
(b)	$(x - 4)(x + 4)$	B1	oe	

Qu 8a

Place	Tally	Frequency
castle	𝍸 𝍸 |	11
farm	𝍸 ||	7
museum	𝍸 |	6

Qu 11



Modifications to the mark scheme for Modified Large Print (MLP) papers: 1MA1 1F

Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme. Notes apply to both MLP papers and Braille papers unless otherwise stated.

The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5º
Measurements of length: ±5 mm

PAPER: 1MA1_1F			
Question		**Modification**	**Mark scheme notes**
1		Wording added ‘five	Standard mark scheme
3		Letter ‘a’ changed to ‘p’.	Standard mark scheme but note change of letter
4		Wording added ‘Look at the diagram for Question 4 in the Diagram Booklet. It shows an angle marked x.’ Diagram enlarged. Angle rotated so the bottom line is horizontal. Angle moved outside of the angle arc and angle arc made smaller.	Standard mark scheme
7		“m” changed to “metres”	Standard mark scheme
8		Wording added ‘Look at the information for Question 8 in the Diagram Booklet.’ Wording ‘Here are the results’ removed and replaced with ‘The results are shown in the Diagram Booklet.’ Words replaced with single capital letters. Key added	Standard mark scheme
8	(a)	Wording added ‘below. There are six spaces to fill.’ Table enlarged. Wording added to the table ‘(C)’, ‘(F)’ and ‘(M)’.	Standard mark scheme
8	(c)	Wording added ‘Look at the diagram for Question 8(c) in the Diagram Booklet. It shows a grid.’ Wording added ‘on the grid in the Diagram Booklet.’ Diagram enlarged. Grid lines made black. Top two rows and right column removed. Braille: left and right vertical axis labelled.	Standard mark scheme but for Braille the B1 for labels to be awarded only for correct place labels on the horizontal axis.
9		Wording added ‘Look at the information for Question 9 in the Diagram Booklet. Selina has a bag of 22 counters.’ Information moved to the Diagram Booklet.	Standard mark scheme
10		Wording added ‘Look at the information for Question 10 in the Diagram Booklet. It shows’. Wording removed ‘Here are’. Frame removed.	Standard mark scheme

PAPER: 1MA1_1F			
Question		**Modification**	**Mark scheme notes**
11		Wording added ‘Look at the diagram for Question 11 in the Diagram Booklet. It shows triangle P and triangle Q on a grid. Describe the transformation that maps triangle P onto triangle Q. Two cut out shapes may be available if you wish to use them.’ Wording removed ‘On the grid, draw an enlargement of the triangle with a scale factor of 3.’ Triangle Q added to the diagram. Triangle P labelled. Diagram enlarged. Shading removed. Cut out shapes provided.	B1 for “Enlargement” B1 for “Scale factor 3” Award no marks if more than one transformation is given
12		In (a) wording added ‘Given that’. Letter ‘g’ changed to ‘m’. Letter ‘h’ changed to ‘n’. In (b) wording added ‘Given that’.	Standard mark scheme but note change of letter.
14		Wording added ‘Look at the diagram for Question 14 in the Diagram Booklet. It shows a grid.’ Diagram enlarged. For Braille: a (blank) table of values added with the words “You may use the table below if you wish”. Axis labels moved to the top of the vertical axis and to the right of the horizontal axis.	Standard mark scheme.
22		Wording added ‘Look at the diagram for Question 22 in the Diagram Booklet. It shows’. Wording removed ‘The’. Wording removed ‘lies’. Diagram enlarged. Cross changed to a dot.	Standard mark scheme
23		Wording added ‘Look at the diagram for Question 23 in the Diagram Booklet. It’. Wording removed ‘The diagram’. Diagram enlarged. Diagram rotated such that ABC is horizontal. Angles moved outside of the angle arcs and angle arcs made smaller. Wording added ‘Angle DAB = x° Angle DBA = y° Angle DBC = w°’	Standard mark scheme
24		Letter ‘x’ changed to ‘y’.	Standard mark scheme but note change of letter
27		Letter ‘xchanged to ‘y’.	Standard mark scheme but note change of letter

Pearson

Mark Scheme (Results)

November 2023

Pearson Edexcel GCSE
In Mathematics (1MA1)
Foundation (Calculator) Paper 2F

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	Two of: 1, 2, 3, 6, 9, 18	B1	for 2 correct factors and no incorrect	Allow more than 2 correct factors but no incorrect.
2	$\frac{9}{10}$	B1	oe	
3	700	B1	cao	
4	One of: 16, 25, 36, 49	B1	for one correct square number	Allow more than 1 correct square number but no incorrect.
5	120	B1	cao	
6	12.5(0)	M1 A1	for 50 ÷ 4 cao	
7 (a) (b)	Cone Diagram	B1 B1	for cone or circular pyramid suitable diagram drawn	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8	Shown	M1 M1 M1 C1	for a method to find the total cost for footballs, hockey sticks or cricket bats, eg 9.5 × 5 (= 47.5) **or** (6 ÷2) × 30 (= 90) **or** 23 × 2 (= 46) **OR** begins to work with budget, eg 200 – 5 (= 195) for a method to find the total cost for two of footballs, hockey sticks or cricket bats, eg two from 9.5 × 5 (= 47.5) **or** (6 ÷2) × 30 (= 90) **or** 23 × 2 (= 46) **OR** works with budget **and** total cost for one of footballs, hockey sticks or cricket bats, eg 200 – "47.5" for a complete method to find comparable figures, eg 9.5 × 5 + (6 ÷2) × 30 + 23 × 2 + 5 or "47.5" + "90" + "46" + 5 or 200 – (9.5 × 5 + (6 ÷2) × 30 + 23 × 2 + 5) or 200 – "188.5" shows correct figures for a conclusion eg (£)188.5(0) **or** (£)11.5(0)	Can be done with addition or subtraction, or combination Figures need not be supported by words but must not be contradicted.
9	WP WS WC BP BS BC GP GS GC	B2 (B1	for all correct and no incorrect or repeats for at least 4 correct)	 Ignore repeats
10	3 : 5	M1 A1	for 24 : 40 or for any ratio equivalent to 24 : 40 **or** 5 : 3 for 3 : 5	 Accept 3 : 5 in the form n : 1, eg 0.6 : 1 **or** 1 : n, eg 1 : 1.66(..)
11 (a) (b)	Unlikely Evens	B1 B1	cao cao	
12	111	M1 A1	for a complete method, eg 37 × 3 oe cao	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13 (a)	Explanation	C1	for correct explanation **Acceptable response** should have multiplied 5 and 4 (once) it should be (just) 5 × 4 it is b × h **or** l × w she has not used the formula for area it should be 20 (cm^2) shouldn't multiply all (four) sides **Not acceptable response** he has found the area twice he is correct he has worked out volume he has worked out the perimeter **or** he should have added the 4 sides	Units may be ignored
13 (b)	Explanation	C1	for correct explanation **Acceptable response** units should be cm^2 or units should be squared it should be 86 cm^2 **or** 20 cm^2 she didn't use the correct units (for area) cm is wrong **Not acceptable response** she is correct it is not squared **or** they should have squared it should be 400 cm **or** it should be 20 cm she has found the perimeter	Ignore numerical value if given

<table>
<tr><th colspan="5">Paper: 1MA1/2F</th></tr>
<tr><th>Question</th><th>Answer</th><th>Mark</th><th>Mark scheme</th><th>Additional guidance</th></tr>
<tr><td>14</td><td>6.95 or
(2kg flour =) 2.70
and
(5 kg sugar =) 4.25</td><td>P1

P1

P1

A1</td><td>for process to find the cost of 1kg of flour, eg 4.05 ÷ 3 (= 1.35)

for process to work with cost of sugar, eg 11.85 – 5 × “1.35” (= 5.10)

for process to find cost for 5kg of sugar, eg “5.10” ÷ 6 × 5(= 4.25)

for 6.95 or (2kg flour =) 2.70 and (5 kg sugar =) 4.25</td><td>May be implied by (2 kg =) 2.70

May be implied by (1 kg =) 0.85 oe</td></tr>
<tr><td>15</td><td>60.48</td><td>P1

P1

A1</td><td>for a beginning process, eg 72 ÷ 100 × 120 (= 86.4)
OR 72 ÷ 100 × 30 ÷ 100 (= 0.216)

for process to use both percentages,
eg [86.4] – ([86.4] × 30 ÷ 100) or [86.4] × ((100 – 30) ÷ 100)
or [86.4] × 30 ÷ 100 (= 25.92)
OR 72 ÷ 100 × ((100 – 30) ÷ 100) (= 0.504)
OR 120 × “0.216” (= 25.92)

cao</td><td>

[86.4] must be a value less than 120</td></tr>
<tr><td>16</td><td>24</td><td>P1

P1

P1

A1</td><td>for finding the total for adults, eg 160 – 85 (= 75)
or for finding adult romance, eg 33 – 19 (= 14)
or for finding children adventure, eg 76 – 34 (= 42)

for finding adult horror, eg “75” – 34 – “14” – 7 (= 20)

for a process to find the number of children who chose horror,
eg 85 – 19 – “42” – “20” (= 4)
or for a complete process to find total horror,
eg (85 – 19 – “42” – “20”) + “20”
or 160 – 33 – 76 – (“20” + 7)

cao</td><td><table><tr><td></td><td>R</td><td>A</td><td>H</td><td>T</td><td>Tot</td></tr><tr><td>C</td><td>19</td><td>42</td><td>4</td><td>20</td><td>85</td></tr><tr><td>A</td><td>14</td><td>34</td><td>20</td><td>7</td><td>75</td></tr><tr><td>Tot</td><td>33</td><td>76</td><td>24</td><td>27</td><td>160</td></tr></table>

A correct answer unsupported will score 1 mark only</td></tr>
</table>

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17	16 | 0 2 8 17 | 2 2 3 7 8 18 | 0 0 3 4 6 8 19 | 1 7 Key: 16|0 = 160 **or** 160|0 = 160	B2 (B1 B1	for a fully correct ordered diagram for a complete unordered diagram **or** for an ordered diagram with at most one error or omission) (indep) for correct key, eg 16|0 **or** 160|0 represents 160	Accept stem of 160, 170, 180, 190 Can be in reverse vertical order (with matching leaves) eg 19, 18, 17, 16 Errors can be omissions; one number in the wrong position is one error. Key must be consistent with the stem.
18 (a)	1.882(0861678…)	B2 (B1	1.882(0861678…) for 16.6 **or** 8.82 **or** $\frac{830}{441}$ **or** 1.88)	Condone $1.\dot{8}82(0861668...)$ for both marks
(b)	1.88	B1	for 1.88 **or** ft their answer to part (a) correctly rounded to 2 dp, providing part (a) has at least 3 dp	Condone $1.\dot{8}8$ Do not accept trailing 0, eg 1.880
19	78	M1 M1 C2 (C1	for finding one angle within the triangle is 180 ÷ 3 (= 60) for method to use parallel lines, eg *BDE* = *DBC* **or** *BCD* + *CDE* = 180 (dep M2) for (*x* =) 78 with a correct reason relating to parallel lines **and** one other correct reason given, with no unused reasons. (dep M1) for one correct reason given for their chosen method, angles in an <u>equilateral triangle</u> are equal <u>alternate angles</u> are equal <u>angles</u> in a <u>quadrilateral</u> add up to 360 <u>angles</u> in a <u>triangle</u> add up to 180 <u>Allied</u> angles / <u>Co-interior</u> angles add up to 180	Angles must be clearly labelled on the diagram or otherwise identified. Correct method can be implied from angles on the diagram if no ambiguity or contradiction. If *x* is clearly identified as 78 award M2 (implied) Underlined words need to be shown; reasons need to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram).

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20 (a)	4 **0** **–2** –2 **0** **4**	B2	for all 4 correct values	
		(B1	for 2 or 3 correct values)	
(b)	Graph	M1	ft (dep B1) for plotting at least 4 points correctly	
		A1	for a fully correct curve drawn	Accept a freehand curve drawn that is not made of line segments.
21	Reflection $y = -x$	B1	for reflection	Score B0 for more than one transformation
		B1	for line $y = -x$ oe	
22 (a)	$13y - 1$	M1	for method to expand one bracket or collect like terms eg $3 \times 2y - 3 \times 5$ $(= 6y - 15)$ **or** $7 \times y + 7 \times 2$ $(= 7y + 14)$ **or** $3 \times 2y + 7 \times y$ $(= 6y + 7y)$ **or** $3 \times -5 + 7 \times 2$ $(= -15 + 14)$	May be implied by $13y$ **or** -1
		A1	oe	
(b)	$3x(2x + 5)$	B2	oe	
		(B1	for $3(2x^2 + 5x)$ **or** $x(6x + 15)$ **or** $3x(ax + b)$)	
(c)	$g = \frac{f - 11}{3}$	M1	for correct first step to rearrange eg $f - 11 = 3g + 11 - 11$ or $f - 11 = 3g$ **or** eg $\frac{f}{3} = \frac{3g}{3} + \frac{11}{3}$ **or** $-3g = 11 - f$ **or** answer ambiguously shown, eg $g = f - 11 \div 3$ **or** given as $\frac{f - 11}{3}$	May be seen in different equivalent form
		A1	oe	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
23	35	P1 P1 P1 A1	for process to work out income and outgoings, eg 7.5(0) × 54 (= 405) **and** 100 + 120 + 80 (= 300) for process to find the profit, eg "405" **–** "300" (= 105) **OR** "405" ÷ "300" (= 1.35) **or** "405" ÷ "300" × 100 (= 135) for a full process to find percentage profit, eg ("105" ÷ "300") ×100 **or** ("1.35" – 1) × 100 **or** "135" – 100 cao	
24	4811.20	M1 A1	for full method for one year, eg 4500 × 1.034 (= 4653) oe for 4811.2(0)	Can be implied by 4806 or 9306 Accept 4811.202 and 4811.21
25	11	M1 M1 A1	for one correct step to isolate x term or constant term on one side, eg adds x to both sides to get $5x – 14 + x = 52 – x + x$ **or** adds 14 to both sides to get $5x – 14 + 14 = 52 – x + 14$ oe for both correct steps to isolate terms in x on one side and constant term on one side, eg "$6x$" – 14 + 14 = 52 + 14, **or** $5x + x =$ "66" $+ x – x$ cao	May be seen in different equivalent forms but must be carried out, not just intention seen. Can be implied by eg $4x = 66$ or $6x = 38$

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
26	21	P1 P1 P1 A1	for process to work correctly with initial ratio, eg 120 ÷ 4 × 9 (= 270) **or** 90 + 120 + 60 (= 270) for process to find the value of 1 part in the new ratio, eg "270" ÷ (2 + 5 + 3) (= 27) for process to find both values for Errol, eg ("27" × 3) (= 81) **and** (120 ÷ 4 × 2) (= 60) cao	Can be implied by 90 : 120 : 60 or by a second ratio that totals to 270
27	327	M1 A1	for 147 + 180 or for 360 – (180 – 147), **or** for drawing a suitable diagram with 147 in the correct position **and** with the bearing of A from B indicated cao	Diagram can be a sketch
28	65	P1 P1 P1 A1	for a full process to find the volume of the container, eg $\pi \times 15^2 \times 43$ (= 30 394.9…) for a process to convert between cm^3 and litres, eg "30 394.9…" ÷ 1000 (= 30.39…) **or** [volume] ÷ 1000 **or** 0.47 × 1000 (= 470) for a complete process to find the time taken, eg [volume] ÷ 0.47 **or** [volume] ÷ "470" answer in the range 64.6 to 65	These steps may be completed in a different order Accept 9675π Accept 9.675π or $\frac{387}{40}\pi$ [volume] can be any value they believe to be the volume that might have been incorrectly converted (or not at all) If an answer is given in the range in working and then rounded incorrectly award full marks.

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
29	32.2	M1	for a correct trig statement, eg 28 × tan 49 or tan 49 = $AB \div 28$	Can use a combination of skills but must have only one unknown in x to score this mark
		A1	Answer in the range 32.2 to 32.22	If an answer is given in the range in working and then rounded incorrectly award full marks.
30	$x = -2$ $y = 1.5$	M1	for correct method to eliminate either x or y or a method leading to substitution	condone one arithmetic error
		M1	(dep M1) for substituting found value in one of the equations **or** correct method after starting again	condone one arithmetic error
		A1	for $x = -2$ and $y = 1.5$ oe	

Modifications to the mark scheme for Modified Large Print (MLP) papers: 1MA1 2F

Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme. Notes apply to both MLP papers and Braille papers unless otherwise stated.

The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5º
Measurements of length: ±5 mm

PAPER: 1MA1_2F			
Question		**Modification**	**Mark scheme notes**
7	(a)	Wording added 'Look at the diagram for Question 7(a) in the Diagram Booklet. You may be provided with a model. It is NOT accurate. They show'. Wording removed 'Here is'; Diagram enlarged. Dashed lines made longer and thicker.	Standard mark scheme
	(b)	Question replaced with a diagram of a triangular prism and possibly a model. "Write down the number of vertices of the prism."	B1 for 6
8		Wording added 'Look at the table for Question 8 in the Diagram Booklet.' Wording 'Here is' removed and replaced with 'The table in the Diagram Booklet shows'. Table enlarged.	Standard mark scheme
9		Wording added 'Look at the table for Question 9 in the Diagram Booklet.' Wording added 'as shown in the table in the Diagram Booklet.' Table enlarged.	Standard mark scheme
13	(a)	Wording added 'Look at the diagram for Question 13 in the Diagram Booklet. It shows a rectangle 5 cm long and 4 cm wide.' Wording 'this' removed and replaced with 'the'. Diagram enlarged.	Standard mark scheme
16		Wording added 'Look at the information for Question 16 in the Diagram Booklet. 160 people were asked to choose their favourite type of book. They each chose from romance or adventure or horror or thriller.' Information moved to the Diagram Booklet.	Standard mark scheme
17		Wording added 'Look at the diagram for Question 17 in the Diagram Booklet. It shows an incomplete stem and leaf diagram.' Wording 'a' removed and replaced with 'the'. Wording added 'in the Diagram Booklet'. Diagram enlarged. Key moved above and left of diagram. Horizontal line added on the bottom of the stem and leaf diagram so the candidates have a line to write on.	Standard mark scheme
19		Wording added 'Look at the diagram for Question 19 in the Diagram Booklet. It'. Wording removed 'The diagram'. Diagram enlarged. Angles moved outside of angle arcs and angle arcs made smaller. Right angle made more obvious. Wording added 'Angle ABD is a right angle. Angle EAB is marked x.'	Standard mark scheme
20	(a)	Wording added 'There are four spaces to fill.' Table turned vertically and enlarged. For Braille (i), (ii), (iii), (iv) added to the table for missing values.	Standard mark scheme
20	(b)	Wording added 'Look at the diagram for Question 20(b) in the Diagram Booklet. It is a grid.' Diagram enlarged. Small squares removed. Axis labels moved to the top of the vertical axis and to the right of the horizontal axis.	Standard mark scheme

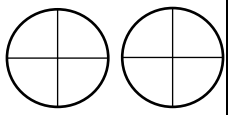
PAPER: 1MA1_2F			
Question		**Modification**	**Mark scheme notes**
1		Wording added ‘Look at the diagram for Question 21 in the Diagram Booklet. It shows triangle A and triangle B on a grid.’ Diagram enlarged. Axis labels moved to the top of the vertical axis and to the right of the horizontal axis. Shapes labelled ‘triangle A’ and ‘triangle B’. Cut out shape provided. Wording added ‘A cut out shape may be available if you wish to use it.’	Standard mark scheme
22	(c)	Letter ‘f’ changed to ‘p’. Letter ‘g’ changed to ‘q’.	Standard mark scheme but note change of letter
28		Wording added ‘Look at the diagram for Question 28 in the Diagram Booklet. You may be provided with a model. They show’. Wording removed ‘The diagram shows’. Diagram enlarged. Radius and height labels moved to the left. Dashed lines made longer and thicker.	Standard mark scheme
29		Wording added ‘Look at the diagram for Question 29 in the Diagram Booklet. It shows a right-angled triangle ABC.’ Diagram enlarged. Right angle made more obvious. Angle moved outside of angle arc and angle arc made smaller. Wording added ‘BC = 28 cm Angle ACB = 49° Angle ABC is a right angle.	Standard mark scheme

Pearson Edexcel

Mark Scheme (Results)

November 2023

Pearson Edexcel GCSE
In Mathematics (1MA1)
Foundation (Calculator) Paper 3F

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.35	B1	cao	
2	8100	B1	cao	
3	valid number	B1	for a valid number, eg −6, −7, −7.5	
4	$\frac{6}{21}$	B1	eg $\frac{2}{7}$ or any equivalent fraction	
5	tenths or $\frac{9}{10}$	B1	for (9) tenths or $\frac{9}{10}$ or 0.9	Condone incorrect spellings provided the intention is clear. Accept .9
6 (a)		C1	for showing diagrams that represent 24 pictorially	shapes can come from a combination of shapes but must sum to 24
(b)	Year 8 (supported)	M1	for beginning to work with the pictogram, eg counting symbols or finding the total for one type of cake	Chocolate = 60 Vanilla = 39 Lemon = 18
		M1	for a complete method to find the total number, eg 5 ×12 + $3\frac{1}{4}$ × 12 + $1\frac{1}{2}$ × 12 + 24 or 60 + 39 + 18 + 24 (= 141) **or** 5 + 3.25 + 1.5 + 2 (= 11.75) **or** 150 ÷ 12 (= 12.5)	For this M mark use 24 for banana or ft from their diagram, but do not award if banana has been omitted. If only totals are shown allow no more than one error in a total.
		C1	for selecting Year 8 with correct figures, eg Year 8 and 141 **or** Year 8 with 9 more **or** Year 8 with $11\frac{3}{4}$ **and** $12\frac{1}{2}$	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
7	144	P1	for process to begin to work with length, eg 8050 ÷ 25 (= 322) **or** 178 × 25 (= 4450)	
		P1	for full process to find number of lengths remaining, eg "322" – 178 **or** (8050 – "4450") ÷ 25 **or** 3600 ÷ 25	3600 implies the first P1 mark
		A1	cao	
8 (a)	Explanation	C1	for explanation, eg subtract 6, decrease by 6, going down by 6	
(b)	12	M1	for 73 – 61 **or** 6 × 2	At least one term must be correct and intention to subtract shown
		A1	cao	Accept −12
(c)	Explanation	C1	for explanation relating to odd and/or even numbers **Acceptable** 52 is even the sequence is odd numbers it goes to **55** (and you cannot reach 52) it goes to **49** (which has gone past 52) nth term is 103 − 6n = 52 which has no integer solutions 52 is between the 8th and 9th terms **Not acceptable** subtracting 6 each time will not lead to 52 it goes past 52	

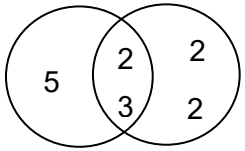
Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9	5	P1	for process to work in consistent units, eg 12 × 1000 (= 12000) **or** 105 ÷ 1000 (= 0.105)	May be seen in subsequent calculations
		P1	for process to work with portion size, eg 105 × 3 (= 315) **OR** 12 ÷ [0.105] (= 114.285…)	For [0.105] allow use of 0.105, 1.05 or 10.5
		P1	for process to work with weight of food per week or number of days, eg "315" × 7 (= 2205) **or** "315" × 5 (= 1575) **or** "315" × 6 (= 1890) [12000] ÷ "315" (=38(.095…)) **OR** [114.285…] ÷ 3 (= 38(.095…)) or [114.285…] ÷ 7 (= 16.3…)	For [12000] accept use of 12000, 1200 or 120 For [114.285] allow continued use of incorrectly converted figure from previous mark.
		P1	(dep P2) for process to find number of weeks, eg "12000" ÷ "2205" (= 5.4…) **OR** "38.095…" ÷ 7 (= 5.4…) **OR** "16.3…" ÷ 3 (= 5.4…) **OR** "2205" × 5 (= 11025) **or** "2205" × 6 (= 13230) **OR** 975 **or** -1230	
		A1	cao	If a correct answer is given without supportive working award 0 marks.
10 (a)	Pentagon	B1	cao	
(b)	112.5	P1	for process to find total length using their edges eg 15 × 7.5 **or** [edges] × 7.5	[edges] must be unambiguously identified
		A1	for 112.5 oe	
11	$\frac{7}{25}$	M1	for $\frac{n}{2+16+7}$ where n is an integer < 25	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	10 55	M1	for starting a process of working with time eg for undertaking some time conversion eg 1 h = 60 min eg 3¼ hrs is 195 mins or ¼ hr = 15 mins or 3 h = 180 min **or** for an answer of 10 45 (am) or 10 40 (am) or 10 50 (am) **or** for an answer of 10 55 pm	
		A1	for 10 55 (am)	
13 (a)	$20h^3$	B1	cao	
(b)	$7y$	B1	cao	
14	$\frac{6}{11}$, 0.558, 0.56, 57%, $\frac{7}{12}$	M1	Converts numbers to common equivalent form, eg 0.58(33..), (0.56), 0.57(0), 0.54(54..), (0.558) **or** any 4 in correct order **or** all 5 in correct reverse order	Decimals converted to at least 2 d.p.
		A1	for correctly ordered list	May be given in converted format.
15 (a)	**57** 64 **7** **36** **25** 11	B3	for a fully correct frequency tree	If probabilities used instead of frequencies award a maximum of B2
		(B2	for at least 4 figures correctly placed)	
		(B1	for at least 1 figure correctly placed)	
(b)	$\frac{57}{64}$	M1	$\frac{a}{64}$ where $0 < a < 64$ and a is an integer (ft) **or** $\frac{57}{b}$ where $b > 57$ and b is an integer (ft)	Must be values from their diagram with numerator < denominator
		A1	(ft) for $\frac{57}{64}$ oe	Accept probabilities given as equivalent fractions, 0.89(06…) or 89(.06..)%

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16	−35	M1	for a correct first step, eg shows $\frac{x}{7}+9-9=4-9$ or $\frac{x}{7}=4-9$ or $\frac{7x}{7}+9\times7=4\times7$ or $x + 63 = 28$	
		A1	cao	
17	No (supported)		Working per week / Working per hour	Throughout units and trailing 0s need not be given. Accept rounded or truncated figures throughout unless ambiguous.
		M1	for 26.4 × 32 (= \$844.80) / for 473.28 ÷ 32 (= £14.79)	
		M1	for "844.8" ÷ 1.796 (= £470.37…) or for 473.28 × 1.796 (= \$850....) / for "14.79" × 1.796 (= \$26.56….) or for 26.4 ÷ 1.796 (= £14.699…)	
		C1	for No and correct figures (850… **and** 844.8) **or** 470.37… / for No and correct figures (14.79… **and** 14.699..) **or** 26.56…	"No" may be expressed in words eg "Australia pay is less"
18	4.8	P1	for finding missing length, eg 14 – 3.8 – 3.8 (= 6.4)	
		P1	for method to find area of triangle, eg [missing length] × 6 ÷ 2 (= 19.2)	Where [missing length] can be "6.4" or identified in working or on the diagram as the missing length
		P1	for method to find area of rectangle, eg [area of triangle] × 3.5 (= 67.2) **or** writes an expression for the area of rectangle eg 14*w* or 14*w* ÷ 3.5	[area of triangle] must be identified as the area of the triangle OR come from: [missing length] × 6 ÷ 2 or [missing length] × 6 or [decimal] × 6 ÷ 2
		P1	for method to link both areas eg 14*w* = [area of triangle] × 3.5 or [area of triangle] = 14*w* ÷ 3.5 or [area of triangle] × 3.5 ÷ 14	
		A1	cao	Award 0 marks for a correct answer without correct supportive working.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	7 cm by 8 cm rectangle drawn	M1 M1 C1	for interpreting the front elevation, eg length = 8 **or** height = 4 For beginning to draw plan, eg. rectangle drawn with one side length of 8 cm or one of 7cm **or** for interpreting front elevation to find missing dimension eg (224 ÷ "8") ÷ "4" (= 7) for correct plan drawn	May be seen on diagram or in part of a calculation May be drawn in any orientation
20 (a)	4.68×10^5	B1	cao	
(b)	0.000 503 7	B1	cao	
21	80	M1 A1	for complete method, eg 200×0.4 or for $\frac{80}{200}$ for the answer cao	
22 (a)	24.6	M1 M1 A1	for finding 5 products within intervals (including end points) with not more than one error, may be seen near table. eg 2×12.5 (= 25), 8×17.5 (= 140), 13×22.5 (=292.5), 21×27.5 (= 577.5), 6×32.5 (= 195) or for 1230 for $\Sigma fx \div \Sigma f$ eg ("25" + "140" + "292.5" + "577.5" + "195") ÷ "50" or "1230" ÷ "50" for 24.6 oe	<table><tr><td>Min *fx*</td><td>Max *fx*</td></tr><tr><td>20</td><td>30</td></tr><tr><td>120</td><td>160</td></tr><tr><td>260</td><td>325</td></tr><tr><td>525</td><td>630</td></tr><tr><td>180</td><td>210</td></tr></table> Σfx must come from 5 products, *fx* within intervals (including end points)

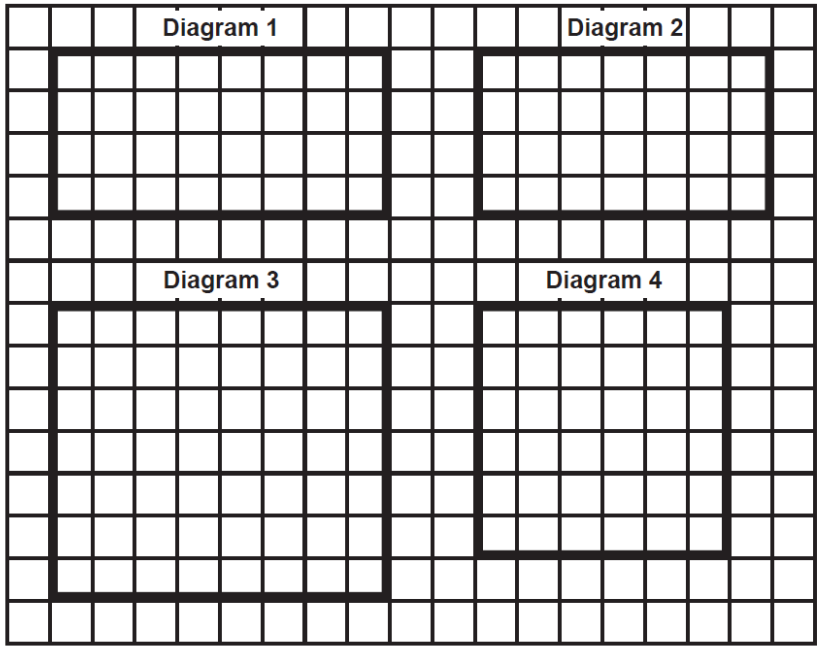
Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
22 (b)	No, with reason	C1	for No **and** reason **Acceptable** No, the median is in the interval $25 < T \leq 30$ No, the median is in the group containing the 25(.5)th temperature No, she did not take into account frequency No, the frequencies are not the same for each group. **Not acceptable** No, the median is 27.5 No, the median is higher than 22.5 $25 < T \leq 30$ Yes, …	Any incorrect statement as part of a correct response can be ignored unless it contradicts the statement,
23 (a)	Explanations	C2 (C1	for two different correct explanations **Acceptable examples** She should have a solid/full/shaded/coloured circle at 4 It does not show that x could be equal to 4 She should have marked/drawn a (clear/empty) circle at −3 The line should be drawn to –3 Jenna started from –2 not –3 **Not acceptable examples** Both circles should be black One circle should be filled in (needs to say which circle) She shouldn't have to reach number 4 Jenna has made no mistakes for one correct mistake described)	Any incorrect statement as part of a correct response can be ignored unless it contradicts the statement,

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
(b)	4	M1	for a correct first step, eg for adding 7 to both sides $5y - 7 + 7 < 16 + 7$ or for dividing throughout by 5 eg $\frac{5y}{5} - \frac{7}{5} < \frac{16}{5}$ **or** for showing 4.6 (oe) as the critical value **or** for $5 \times 4 - 7$ with 13 seen as answer	Allow use of any inequality or as an equation for the first mark Award 1 mark for 4.6 oe, eg $y = \frac{23}{5}$ or $y < 4.6$
		A1	for 4 or $y = 4$ with no incorrect working	An answer of 4 from incorrect working can score 1 mark at most.
24	4 packs and 5 boxes,	P1	for start of a process to find common multiples of 30 and 24, eg writes down at least 3 multiples of 30 and at least 3 multiples of 24 **or** draws factor trees for both 30 and 24 with no more than 1 error in total **or** draws a correct Venn diagram	30, 60, 90, 120, 150, 180, 210, 240 … 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, … Condone the inclusion of 1 in factor tress or Venn diagrams for this mark 
	or any multiple	P1	for identifying a common multiple eg 120 or 240 or $5 \times 3 \times 2 \times 2 \times 2$ oe	May use any common multiple, 120, 240, 360...
		A1	for 4 packs and 5 boxes or any multiple of this pairing eg 8, 10	Award 0 marks for a correct answer without correct supportive working.
25	20	M1	for $30 \times 4 \div 6$ oe	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
26	7 hours 56 minutes	P1	for process to begin to work with speed, eg 143 ÷ 55 (= 2.6)	May work in minutes or hours and minutes
		P1	for process to work in minutes, eg "2.6" × 60 (= 156 mins) **and** 5 × 60 + 20 (= 320 mins) **or** for 476 (mins) **or** for process to work in hours eg "2.6" **and** $5\frac{20}{60}$ (= 5.33...)...or for 7.93... **or** for process to work in hours and minutes, eg "2" + ("0.6" × 60) (= 2 hrs 36 mins)	Accept 2 or more decimal places for this mark
		A1	cao	
27	Shown	M1	for substitution to find area of face, eg 3.5 = $\frac{504}{\text{area}}$ or 3.5 × area = 504 or area = 504 ÷ 3.5 (= 144) **or** for working from surface area eg 900 ÷ 6 (= 150)	Other equivalent methods should be credited accordingly
		M1	for method to find comparable figures, eg "144" × 6 (= 864) or "150" × 3.5 (= 525) or 504 ÷ "150" (= 3.36…) **or** 504 ÷ 3.5 (= 144) **and** 900 ÷ 6 (= 150) **or** 900 ÷ 144 (= 6.25) **and** 6	
		C1	for correct comparable figures, eg 864 (and 900) **or** 144 and 150 **or** 525 (and 504) **or** 3.36… (and 3.5) **or** 6.25 and 6	Condone incorrect units given.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
28	$y = -2x + 3$	M1	for a correct method to find the gradient of the line, eg $\frac{-1-3}{2-0}$ (= −2) **or** uses 3 as the intercept in $y = mx + c$, eg $y = mx + 3$ oe, $y = 1.5x + 3$	
		M1	for $y = [-2]x + c$ or for (L=) $3 - 2x$ or uses their gradient and a point on the line, eg $y - -1 = [-2](x - 2)$	$[-2]$ must be identifiable as their gradient
		A1	for $y = -2x + 3$ oe	Any correct equation gets 3 marks
29	15.6	P1	for beginning process to use Pythagoras to find diameter or radius, eg $3.5^2 + 3.5^2$ (= 24.5) **or** $1.75^2 + 1.75^2$ (= 6.125)	Award P1 for a correct Pythagorean statement eg $3.5^2 + 3.5^2$ =diameter^2
		P1	for complete process to find diameter or radius, eg $\sqrt{3.5^2 + 3.5^2}$ or $\sqrt{24.5}$ (= 4.94..) or $\sqrt{1.75^2 + 1.75^2}$ or $\sqrt{6.125}$ (= 2.47…)	4.94.. or 2.47.. truncated or rounded can imply P2
		P1	for process to find circumference of circle, eg $\pi \times$ "4.94…" (= 15.55…) **or** $2 \times \pi \times$ "2.47…" (= 15.55…)	Accept use of 3.14 or better for π Accept use of truncated values for 4.94.. or 2.47..
		A1	for answer in range 15 to 16	If an answer is shown in the range in working and then incorrectly rounded award full marks. Award 0 marks for a correct answer without correct supportive working.

Question 19 exemplars



Question 19 exemplars

Diagram 1: M2

Diagram 2: M2

Diagram 3: M2 C1

Diagram 4: 0 marks

Modifications to the mark scheme for Modified Large Print (MLP) papers: 1MA1 3F

Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme. Notes apply to both MLP papers and Braille papers unless otherwise stated.

The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5º
Measurements of length: ±5 mm

PAPER: 1MA1_3F			
Question		**Modification**	**Mark scheme notes**
4		Wording added ‘Look at the diagram for Question 4 in the Diagram Booklet. It shows’. Wording removed ‘Here is’. Diagram enlarged. Shading changed.	Standard mark scheme
6		Wording added ‘Look at the diagram for Question 6 in the Diagram Booklet. It is an incomplete pictogram showing’. Wording removed ‘The pictogram shows’. Diagram enlarged. Frame removed from the key. Key moved above and left of the diagram. In (a) wording added ‘in the Diagram Booklet’.	Standard mark scheme
10	(a)	Diagram enlarged and left aligned.	Standard mark scheme
10	(b)	Wording added ‘Look at the diagram for Question 10(b) in the Diagram Booklet. You may be provided with a model. They show’. Wording removed ‘Here is’. Diagram enlarged. Model provided.	Standard mark scheme
13	(a)	Letter ‘h’ changed to ‘m’.	Standard mark scheme but note change of letter.
14		Wording added ‘five’.	Standard mark scheme
15		Wording added ‘Look at the diagram for Question 15 in the Diagram Booklet. It shows an incomplete frequency tree.’ Wording added ‘in the Diagram Booklet’. Diagram enlarged. Wording added ‘There are six spaces to fill.’ Braille: Blank ovals will have (i), (ii), (iii), (iv), (v), (vi) on diagram. For Braille also ‘Ans: (i)___ (ii)___ (iii)___ (iv) ___ (v) ___ (vi) _____	Standard mark scheme
18		Wording added ‘Look at the diagram for Question 18 in the Diagram Booklet. It shows shape ABCDEFG’. Wording removed ‘Here is a shape’. Diagram enlarged. Diagram labelled ABCDEFG and H. Dashed lines made longer and thicker. Arrows removed. Right angle made more obvious. Wording added ‘, FE’. Wording added ‘FG = 3.8 cm ED = 14 cm AH = 6 cm Angle AHB is a right angle.’	Standard mark scheme

PAPER: 1MA1_3F			
Question		**Modification**	**Mark scheme notes**
19		Wording removed 'The front elevation of a cuboid is shown on the centimetre grid below.' Wording added 'Look at the diagrams for Question 19 in the Diagram Booklet. You may be provided with a model. It is accurate. The model shows a cuboid. Diagram 1 shows the front elevation of the cuboid on a grid. 1 square length on the grid represents 1 cm.' Shading changed. Black grid lines. Wording added to the diagram '1 square length on the grid represents 1 cm'. Diagram enlarged. Diagrams 2 – 4 added. Diagram 2: 7 squares by 4 squares. Diagram 3: 8 squares by 7 squares. Diagram 4: 6 squares by 6 squares. Wording added 'Which of the four diagrams, Diagram 1, Diagram 2, Diagram 3 or Diagram 4 represents the plan view of the cuboid? You MUST show your working.'	Diagram 4 B0 Diagram 2 B2 Diagram 1 B2 Diagram 3 B3
21		Wording added 'Look at the diagram for Question 21 in the Diagram Booklet. It shows'. Wording removed 'Here is'. Spike removed. Spinner straightened up. Centre dot added. Spinner enlarged. Wording added 'below'. Table turned vertically, enlarged and left aligned.	Standard mark scheme
22		Wording added 'Look at the table for Question 22 in the Diagram Booklet.' Wording added 'in the Diagram Booklet'. Table enlarged.	Standard mark scheme
23		Wording added 'Look at the diagram for Question 23 in the Diagram Booklet. It shows a number line.' Wording 'a' removed and replaced with 'the'. Wording 'Here is her answer' removed and replaced with 'Her answer in shown in the Diagram Booklet.' Diagram enlarged. Open headed arrows.	Standard mark scheme
27		Wording added 'Look at the diagram for Question 27 in the Diagram Booklet. You may be provided with a model. They show'. Wording removed 'The diagram shows'. Diagram enlarged. Table added to the diagram. Frame removed from the formula.	Standard mark scheme
28		Wording added 'Look at the diagram for Question 28 in the Diagram Booklet. It shows'. Wording removed 'is shown'. Wording 'the' removed and replaced with 'a'. Axis labels moved to the top of the vertical axis and to the right of the horizontal axis. Diagram enlarged. Open headed arrows. L label moved up.	Standard mark scheme
29		Wording added 'Look at the diagram for Question 29 in the Diagram Booklet. It shows the points'. Wording removed 'are points'. Diagram enlarged. Shading changed.	Standard mark scheme