Pearson

Mark Scheme (Results)

November 2024

Pearson Edexcel GCSE
In Mathematics (1MA1)
Higher (Non-Calculator) Paper 1H

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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 (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 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 E.g. 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 E.g. "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 E.g. [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: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	682	M1	for a start to a method, eg 8184 ÷ 12 (or 818.4 ÷ 1.2) that leads to 6 as the first digit **or** for a complete method with no more than one arithmetic error	A start to a repeated subtraction method or build-up method is acceptable if a correct first digit of 6 is found
		A1	for digits 682	
		A1	ft (dep M1) for correct placement of the decimal point into their final answer	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
2 (a)	75	P1	for process to find sum of unknown probabilities eg 1 – (0.10 + 0.30 + 0.05 + 0.25) (= 0.3) oe or for process to find number of times dice lands on 3, 4, 5 or 6 eg (0.10 + 0.30 + 0.05 + 0.25) × 500 (= 350) oe	Award mark for any two probabilities that sum to 0.3 eg in the table or probability of 2 = 0.15
		P1	for a complete process, eg (“0.3” ÷ 2) × 500 oe or (500 – “350”) ÷ 2 oe	P1P1A0 for answer of 75:500 or $\frac{75}{500}$
		A1	cao	
(b)	Answer to part (a) will be greater	C1	for an explanation that the answer will be greater **Acceptable examples** It makes the answer an underestimate The number will be higher The answer will increase / will go up The number of 2s will increase It would be more than [75] **Not acceptable examples** My answer will change My answer is incorrect The calculation will change The probability will change It would make the probability of 2 go up My answer won’t change	Where [75] is their answer to (a)

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
3 (a)	$2\frac{1}{3}$	M1	for a method to subtract by writing both fractions with a common denominator with at least one correct numerator, eg $3\frac{3}{6}-1\frac{1}{6}$ **or** $\frac{3}{6}-\frac{1}{6}\left(=\frac{2}{6}\right)$ **or** $\frac{21}{6}-\frac{7}{6}\left(=\frac{14}{6}\right)$ **or** $\frac{42}{12}-\frac{14}{12}\left(=\frac{28}{12}\right)$	
		A1	for $2\frac{1}{3}$ or an equivalent mixed number	Do not isw incorrect further work from correct equivalent mixed number
(b)	Shown	M1	for conversion to improper fractions, eg $\frac{21}{4}$ **or** $\frac{7}{3}$ **or** $\frac{9}{4}$	
		M1	(dep) for method to divide by a fraction, eg $\frac{21}{4}\times\frac{3}{7}$ or $\frac{63}{12}\div\frac{28}{12}$	
		C1	for complete work showing each stage as far as $\frac{9}{4}$ **or** $2\frac{7}{28}$	Must see an intermediate step, eg $\frac{63}{28}$ must be seen and then cancelled or correct cancelling seen before the multiplication

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
4	180 – 4*e* and reason	M1	for angle *ACD* = *e* **or** for angle *ADC* + angle *BAD* = 180 **or** for angle *BAX* = 3*e* (where *X* lies on *DA* extended)	Angles must be clearly labelled on the diagram or otherwise identified
		A1	for 180 – 4*e* oe	May be unsimplified
		C1	(dep M1) for an appropriate reason relating to parallel lines from eg <u>alternate</u> angles are equal or <u>allied</u> angles / <u>co-interior</u> angles add up to 180 or for <u>corresponding</u> angles are equal	Underlined words need to be shown Reason needs to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram)
5 (a)	Estimated time	P1	for rounding of distance = 5 (miles) or speed = 30 (mph)	
		P1	(dep) for using time = distance/speed eg 5 ÷ 30 **or** for a complete process, eg 30 ÷ 60 (= 0.5) **and** 5 ÷ "0.5" or 30 ÷ 5 (= 6) **and** 60 ÷ "6" or $4.96 \times \frac{60}{30}$	
		A1	for a correct answer following through their correct rounded distance and/or speed	
(b)	Overestimate with reason	C1	ft from (a) for decision with correct reasoning, eg overestimate as dividing a larger number by a smaller number or overestimate as miles rounded up and speed rounded down	Ft the rounding and process from (a) Must relate to estimation and not rounding of their final answer and they must have a final answer to part (a)

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
6	55	P1	for process to find the sum of the interior angles of a pentagon, eg $180 \times (5 - 2)$ (= 540) oe	Can be implied by the shape correctly divided into triangle and quadrilateral or three triangles with correct angle sums marked
		P1	for the start to a process of giving each angle in a common form, eg $d = 3c$ **or** $e = 2c$ **or** x, $3x$, $2x$	Can be implied by division by 7 or 1, 1, 3, 2 given in a ratio eg 1 : 2 : 1 : 3
		P1	for process to find the value of c, eg ([540] – 155) ÷ 7 oe or for a correct equation in one variable, eg $c + 155 + c + 3c + 2c = [540]$ oe	Where [540] is what they believe to be the angle sum of the pentagon
		A1	cao	
7	Rate of change of volume	C1	for a correct explanation **Acceptable examples** The rate of water poured Speed of pouring water out from the tank How fast the water is being used (in the tank over time) Amount of water decreasing in the tank each second **Not acceptable examples** Negative correlation / negative gradient Amount of water decreasing in the tank in seconds As time increases the volume of water in the tank decreases It is negative, the volume of litres is going down It represents the deceleration or changing speed	Allow amount of water increasing in the tank each second

Paper: 1MA1/1H					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8		4.5	P1	for process to find the area, eg $80 = \frac{720}{A}$ **or** (area =) $\frac{720}{80}$ (= 9) **or** $80 = \frac{720}{2x}$ **or** $2x = \frac{720}{80}$	
			P1	for complete process to find the length, eg "9" ÷ 2 or 720 ÷ (2 × 80)	
			A1	for 4.5 oe	
9	(a)	Box plot	B3	for a fully correct box plot	Box can be any height. Accept ends that are marked (eg line, cross, dot) or defined by the ends of the whiskers if clear
			(B2	for a box drawn **and** at least **three** correctly plotted values from 8, 25, 34, 42, 74)	For LQ accept value in range 24 to 26
			(B1	for correctly identifying one of LQ (25), Median (34), UQ (42) from the cf graph)	May be implied by one of these values being correctly plotted
	(b)	Yes with supporting evidence	M1	for 30 ÷ 100 × 60 (= 18)	
			M1	for reading from the graph at cf = 60 – "18" (= 40)	
			C1	for correct decision and correct figures	
				Alternative	
			M1	for reading from the graph at mark = 40 (= 42)	
			M1	for (60 – "42") ÷ 60 × 100 (= 30) **or** for 60 – "42" (= 18) **and** 30 ÷ 100 × 60 (= 18)	
			C1	for correct decision and correct figures	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 (a)	10	M1	for $25^{\frac{1}{2}} = 5$ **or** $8^{\frac{1}{3}} = 2$	Accept $25^{\frac{1}{2}} = -5$ for M1 only
		A1	cao	
(b)	$\frac{1}{8}$	M1	for $\left(\frac{1}{\sqrt[5]{32}}\right)^3$ **or** $\left(\frac{1}{2}\right)^3$ **or** $\sqrt[5]{\frac{1}{32^3}}$ **or** $\sqrt[5]{\frac{1}{32768}}$	
		A1	for $\frac{1}{8}$ oe	
			SCB1 for answer of 8 if M0 scored	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11 (a)	Explanation	C1	for explanation **Acceptable examples** the sum must be 5 and the product must be 6 she had the sum and the product the wrong way round it should be the other way around *a* and *b* must be multiplied together to make 6 **Not acceptable examples** the answer should be $(x + 3)(x + 2)$ the product of *a* and *b* is not 5	
(b)	$2(m – 1)(m + 1)$	M1	for a correct partial factorisation, eg $2(m^2 – 1)$ **or** $(2m – 2)(m + 1)$ **or** $(m – 1)(2m + 2)$	
		A1	cao	
(c)	$(a + b)(x – y)$	M1	for a correct partial factorisation, eg $x(a + b) – y(a + b)$ **or** $x(a + b) + y(–a – b)$ **or** $a(x – y) + b(x – y)$	
		A1	for $(a + b)(x – y)$ oe	
12	64 : 25	P1	for start of process to find ratio of lengths of **A** to **B**, eg $\sqrt[3]{64}$ (= 4) **or** $\sqrt[3]{125}$ (= 5) **or** 4 : 5	
		P1	for $\sqrt[3]{125} \div 2$ (= 2.5) oe **or** $\left("\sqrt[3]{64}"\right)^2$ (= 16)	
		P1	for process to find ratio of areas of **A** to **C**, eg "4"^{2} : "2.5"^{2} (= 16 : 6.25)	
		A1	for 64 : 25 oe in form *a* : *b* where *a* and *b* are integers	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13	7	P1	for setting up an equation using volumes, eg $(x + 2)(2x – 1)(x – 1) = 2x(x +3)(x – 3) + 142$	May occur later in the process Must use expressions for volumes but these may have been incorrectly expanded and simplified
		P1	for process to find an expanded expression for the area of **one** face, eg $(x + 2)(2x – 1) = 2x^2 – x + 4x – 2$ or $2x^2 + 3x – 2$ or $(x + 2)(x – 1) = x^2 – x + 2x – 2$ or $x^2 + x – 2$ or $(2x – 1)(x – 1) = 2x^2 – 2x – x + 1$ or $2x^2 – 3x + 1$ or $2x(x + 3) = 2x^2 + 6x$ or $2x(x – 3) = 2x^2 – 6x$ or $(x + 3)(x – 3) = x^2 – 3x + 3x – 9$ or $x^2 – 9$	Condone one incorrect term in expansion of two brackets
		P1	for a complete process to find a fully expanded expression for the volume of **one** cuboid, eg $2x^3 + 3x^2 – 2x – 2x^2 – 3x + 2$ or $2x^3 + x^2 – 5x + 2$ **or** $2x^3 + 6x^2 – 6x^2 – 18x$ or $2x^3 – 18x$	Expression need not be fully simplified, but must be correct
		P1	(dep P3) for correct rearrangement of the expanded terms in their equation leading to a 3-term quadratic eg $x^2 + 13x – 140$ (= 0) or $x^2 + 13x = 140$	
		A1	cao	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
14	6	M1	for either sin 30 = 0.5 oe **or** sin 45 = $\frac{1}{\sqrt{2}}$ or $\frac{\sqrt{2}}{2}$	
		M1	for $\frac{AB}{\sin 45} = \frac{3\sqrt{2}}{\sin 30}$ oe	
		A1	cao	
15	4 : 1	P1	for $\overrightarrow{OM} = \frac{1}{4}\mathbf{a}$ or $\overrightarrow{MO} = -\frac{1}{4}\mathbf{a}$ or $\overrightarrow{ON} = \frac{1}{3}\mathbf{b}$ or $\overrightarrow{NO} = -\frac{1}{3}\mathbf{b}$ $\overrightarrow{OX} = \mathbf{a} - \mathbf{b}$ or $\overrightarrow{XO} = -\mathbf{a} + \mathbf{b}$ or $\overrightarrow{ZY} = \mathbf{a} - \mathbf{b}$ or $\overrightarrow{YZ} = -\mathbf{a} + \mathbf{b}$	
		P1	for $\overrightarrow{XN} = \mathbf{b} - \mathbf{a} + \frac{1}{3}\mathbf{b}$ **(=** $\frac{4}{3}\mathbf{b} - \mathbf{a}$ **)** oe **or** $\overrightarrow{MN} = \frac{1}{3}\mathbf{b} - \frac{1}{4}\mathbf{a}$ oe **or** $\overrightarrow{XM} = \mathbf{b} - \mathbf{a} + \frac{1}{4}\mathbf{a}$ (= $\mathbf{b} - \frac{3}{4}\mathbf{a}$) oe	Implies 1st P1
		P1	for $\overrightarrow{XN} = \mathbf{b} - \mathbf{a} + \frac{1}{3}\mathbf{b}$ oe **and** $\overrightarrow{MN} = \frac{1}{3}\mathbf{b} - \frac{1}{4}\mathbf{a}$ or $\frac{4}{3}\mathbf{b} - \mathbf{a} - \mathbf{b} + \frac{3}{4}\mathbf{a}$ oe	
		A1	for 4 : 1 oe	A correct answer with no supportive working gets 0 marks

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16 (a)	$3\sqrt{5}$	M1	for $\frac{15}{\sqrt{5}}\times\frac{\sqrt{5}}{\sqrt{5}}$ or $\frac{15}{\sqrt{5}}\times\frac{-\sqrt{5}}{-\sqrt{5}}$	
		A1	for $3\sqrt{5}$ or $\sqrt{45}$	
(b)	$\frac{32-9\sqrt{3}}{11}$	M1	(indep) for writing $\sqrt{75}$ as $5\sqrt{3}$	This mark can be awarded whenever this is seen, which might be later in the process.
		M1	for method to rationalise the denominator, eg $\frac{\sqrt{75}-2}{1+2\sqrt{3}}\times\frac{1-2\sqrt{3}}{1-2\sqrt{3}}$ **or** $\frac{5\sqrt{3}-2}{1+2\sqrt{3}}\times\frac{1-2\sqrt{3}}{1-2\sqrt{3}}$	
		M1	(dep on previous M1) for expanding terms, condone one error in numerator or denominator eg $\frac{\sqrt{75}-2\sqrt{75}\sqrt{3}-2+4\sqrt{3}}{1-2\sqrt{3}+2\sqrt{3}-4\sqrt{3}\sqrt{3}}$ **or** $\frac{5\sqrt{3}-10\sqrt{3}\sqrt{3}-2+4\sqrt{3}}{1-2\sqrt{3}+2\sqrt{3}-4\sqrt{3}\sqrt{3}}$	
		A1	for $\frac{32-9\sqrt{3}}{11}$ oe eg $\frac{-32+9\sqrt{3}}{-11}$	Accept $a = 32$, $b = 9$, $c = 11$

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17	100	M1	for angle *BAC* = 40	
		M1	for angle *OAC* or angle *OCA* = 10 **or** angle *OAB* or angle *OBA*= 30	angle *AOB* = 120 gets M1M1
		M1	for angle *ACB* = (180 – 30 – 30) ÷ 2 (= 60) **or** angle *OCD* = 90 or angle *OCB* = 50	Award M3C0 for answer of 100 with no correct appropriate circle theorem
		C1	for angle *ACD* = 100 **and one** correct appropriate circle theorem from alternate segment theorem angle at the centre is twice the angle at the circumference the tangent to a circle is perpendicular to the radius	Underlined words need to be shown Reason needs to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram)
18 (a)	$\frac{4x+3}{5}$	M1	for first step to change the subject of $y=\frac{5x-3}{4}$ or $x=\frac{5y-3}{4}$ eg $4y=5x-3$ or $4x=5y-3$	Answer of $\frac{4y+3}{5}$ gets M1A0
		A1	oe	
(b)	100	M1	for h(5) = 1 – 2 × 5 (= – 9) **and** a clear intention to find g("– 9") **or** for $((1 – 2 \times 5) – 1)^2$ **or** for stating gh(x), eg $(1 – 2x – 1)^2$ oe	
		A1	cao	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	0.204	P1	for a process to find a correct product, eg P(**A** plays **C** in the final) = 0.6 × 0.2 (= 0.12) or P(**A** plays **D** in the final) = 0.6 × 0.8 (= 0.48) or P(**A** wins against **B** and **C**) = 0.6 × 0.5 (= 0.3) or P(**A** wins against **B** and **D**) = 0.6 × 0.3 (= 0.18)	Could work with fractions Could be seen as part of a correct triple product
		P1	for a process to find the probability of **A** winning against **C or** winning against **D** in the final, eg P(**A** wins against **C** in the final) = "0.12" × 0.5 (= 0.06) or P(**A** wins against **D** in the final) = "0.48" × 0.3 (= 0.144) or P(**A** wins against **C** in the final) = "0.3" × 0.2 (= 0.06) or P(**A** wins against **D** in the final) = "0.18" × 0.8 (= 0.144)	
		P1	for a complete process, eg P(**A** wins the tournament) = "0.06" + "0.144"	
		A1	for 0.204 oe	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20	$y+\sqrt{3}x=4$	P1	for process to find the value of p, eg $\sqrt{4-1^2}$ $(=\sqrt{3})$	May occur later in the process
		P1	for a start of a process to find gradient of tangent, eg gradient of normal/radius = $\frac{1}{p}$ or $\frac{1}{"\sqrt{3}"}$ or $\frac{1}{[p]}$ **or** for gradient of tangent = $-p$ or $-"\sqrt{3}"$ or $-[p]$	Where $[p]$ is their stated value of p
		P1	(dep P1) for substituting ("$\sqrt{3}$", 1) into $y =$ "$-\sqrt{3}$"$x + c$ or for $y-1="-\sqrt{3}"(x-"\sqrt{3}")$ oe **or** for $1 = -p \times p + c$ **or** for substituting ($[p]$, 1) into $y=-[p]x+c$ **or** for substituting ("$\sqrt{3}$", 1) into $y=-\frac{1}{[m]}x+c$	Where $[m]$ is clearly their gradient of the normal/radius
		A1	for $y+\sqrt{3}x=4$	A correct answer with no supportive working gets 0 marks

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

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_1H			
Question		**Modification**	**Mark scheme notes**
2		Wording changed: Look at the table for Question 2 in the Diagram Booklet. It shows … Table turned vertically and enlarged.	Standard mark scheme
4		Wording changed: Look at the diagram for Question 4 in the Diagram Booklet. It shows parallelogram ABCD. Angle BAC is marked p. Angle ADC is marked 3p. Letter 'e' changed to 'p'. Diagram enlarged. Angles moved outside of angle arcs and angle arcs made smaller.	Standard mark scheme but note change of letter
6		Wording changed: Look at the diagram for Question 6 in the Diagram Booklet. It shows a pentagon. Angles p, q, r, s and t are marked. Letters changed: 'a' changed to 'p', 'b' changed to 'q', 'c' changed to 'r', 'd' changed to 's', 'e' changed to 't'. Diagram enlarged. Angles moved outside angle arcs and angle arcs made smaller.	Standard mark scheme but note change of letters
7		Wording changed: Look at the diagram for Question 7 in the Diagram Booklet. It is a graph showing the volume of water, V litres, in a tank at time t seconds. Diagram enlarged. Open headed arrows.	Standard mark scheme
8		Wording changed: 'Look at Diagram 1, Diagram 2 and Diagram 3 for Question 8 in the Diagram Booklet. You may be provided with a model. They are NOT accurate. Diagram 1 and the model show a solid triangular prism on a horizontal floor. Diagram 2 shows the rectangle base of the prism. Diagram 3 shows the triangular side of the prism.' 'm' changed to 'metres' Model provided. Diagram enlarged. Floor added to 3D diagram. Label added 'length'. 2 new 2D views added.	Standard mark scheme

PAPER: 1MA1_1H			
Question		**Modification**	**Mark scheme notes**
9		Wording changed: 'Look at the diagram for Question 9 in the Diagram Booklet. It is a cumulative frequency graph giving …' 74 changed to 45 and 8 changed to 5. Diagram enlarged. Open headed arrows. Intermediates added on the horizontal axis. Graph cropped at 50 on the horizontal axis. Line changed to go through the points (5, 0), (15, 15), (25, 30), (30, 45), (35, 50), and (45, 60)	
	(a)	Wording changed: 'Look at the diagram for Question 9(a) in the Diagram Booklet. It shows a grid.' Wording changed: 'below' changed to 'in the Diagram Booklet' For Braille: sentence added Bumpons and drawing film are provided if you wish to use them Diagram enlarged. Intermediates added on the horizontal axis. Top axis labelled. Open headed arrow. Graph cropped at 50 on the horizontal axis.	Standard mark scheme but note change in values: lowest mark = 5 LQ in the range 14 to 16 Median in the range 24 to 26 UQ in the range 29 to 31 highest mark = 45
	(b)	'40' changed to '35'. '30%' changed to '1/6'.	M1 for 1/6 × 60 (= 10) M1 for reading from the graph at cf = 60 – "10" (= 35) C1 for correct decision and correct figures **OR** M1 for reading from the graph at mark = 35 (= 50) M1 for (60 – "50") (= 10) **and** 10/60 = 1/6 C1 for correct decision and correct figures

PAPER: 1MA1_1H			
Question		**Modification**	**Mark scheme notes**
11	(a)	Letters changed: ‘a’ changed to ‘p’ and ‘b’ changed to ‘q’	Standard mark scheme but note change of letters
	(c)	Letters changed: ‘a’ changed to ‘t’ and ‘b’ changed to 'u’	M1 for $x(t + u) – y(t + u)$ **or** $x(t + u) + y(–t – u)$ **or** $t(x – y) + u(x – y)$ A1 for $(t + u)(x – y)$ oe
12		Letters changed: ‘a’ changed to 'p’ and ‘b’ changed to 'q’	Standard mark scheme
13		Wording changed: ‘Look at Diagrams 1-6 for Question 13 in the Diagram Booklet. You may be provided with two models. They are NOT accurate. The models show cuboid A and cuboid B. Cuboid A has height x + 2, length 2x - 1 and width x - 1. Cuboid B has height x + 3, length 2x and width x - 3. Diagram 1 shows the 3D view of cuboid A. Diagram 2 shows the front of cuboid A. Diagram 3 shows the side of cuboid A. Diagram 4 shows the 3D view of cuboid B. Diagram 5 shows the front of cuboid B. Diagram 6 shows the side of cuboid B.’ Models provided. Diagrams enlarged. 4 additional 2D diagrams added.	Standard mark scheme
14		Wording changed: ‘Look at the diagram for Question 14 in the Diagram Booklet. It shows triangle ABC AC = $3\sqrt{2}$ cm Angle ACB = 45° Angle ABC = 30°’ Diagram enlarged. Angles moved outside of angle arcs and angle arcs made smaller.	Standard mark scheme

PAPER: 1MA1_1H			
Question		**Modification**	**Mark scheme notes**
15		Wording changed: 'Look at the diagram for Question 15 in the Diagram Booklet. It shows parallelogram OXYZ' Vector '**a**' changed to vector '**p**' and vector '**b**' changed to vector '**q**' Diagram enlarged. M and N lines made longer.	Standard mark scheme but note change of letters
16	(b)	Letters changed: 'a' changed to 'p', 'b' changed to 'q' and 'c' changed to 'r'	Standard mark scheme
17		Wording added: 'Look at the diagram for Question 17 in the Diagram Booklet. It shows …' Wording changed: 'are' to 'three' Diagram enlarged. Angle BCD labelled on the diagram.	Standard mark scheme
20		Letters changed: 'a' changed to 'm' and 'b' changed to 'n'	Standard mark scheme

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