Pearson Edexcel

Mark Scheme (Results)

Summer 2019

Pearson Edexcel GCSE (9 – 1)
In Mathematics (1MA1)
Higher (Calculator) Paper 2H

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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: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1 (a)	$n > 2$	M1	for a method to isolate terms in n in any inequality or equation eg $14n - 11n > 6$ or $n = 2$	Ignore incorrect inequality sign and accept "=" sign
		A1	cao	
(b)	 	M1	for $-2 - 3 < x \leq 4 - 3$ $(-5 < x \leq 1)$	A circle around −5 and 1 implies M1
		M1	for drawing a line from −5 to 1 **or** (indep) for an open circle at either −2 or −5 **or** (indep) for a closed circle at 4 or 1	A line from −5 to 1 implies M2 if no working shown
		A1	cao	
2	Graph	B3	for a correct line between $x = -2$ and $x = 4$	
		(B2	for a correct straight line segment through at least 3 of (−2, −7), (− 1, −5), (0, −3), (1, −1), (2, 1), (3, 3), (4, 5) **or** for all of these points plotted but not joined **OR** for a line drawn with a positive gradient through (0, −3) **and** clear intention to use a gradient of 2, eg line through (0,−3) going across 2 squares and up 4 squares)	Ignore any incorrect points. Points need not be plotted for a correct line (segment) drawn Table of values x: –2, –1, 0, 1, 2, 3, 4 y: –7, –5, –3, –1, 1, 3, 5
		(B1	for at least 2 correct points stated or plotted **OR** for a line drawn with a positive gradient through (0, −3) **OR** a line with gradient 2)	Ignore any incorrect points Coordinates may be in a table or in working

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
3 (i)	65	M1	for working with proportion eg 10 ÷ 30 × 195 (=65)	Condone use of 200 for 195
		A1	cao	
(ii)	statement	C1	for statement **Acceptable examples** sample is representative (otherwise answer wrong) random sample (otherwise answer will be different) the 30 students are from the 195 (otherwise not accurate) 10 out of every 30 want to go to the Theme Park (otherwise answer will be different/wrong) there is no bias **Not acceptable examples** There would be more than 10 people who want to go to the Theme Park I rounded my answer	
4	8	P1	for working with volume of the cuboid, eg 30 × 6 × 19 (= 3420) **OR** for using $\frac{2}{3}$ with one dimension, eg. 30 × 2 ÷ 3 (= 20)	For P marks, ignore attempts at unit conversion
		P1	for "3420" × 2 ÷ 3 (= 2280) **or** "3420" ÷ 3 (= 1140) **OR** "20" × 6 × 19 (= 2280) **OR** "3420" ÷ 275 (= 12.4… = 12 cups)	
		P1	(dep on P2) for "2280" ÷ 275 (= 8(.29...)) **or** "1140" ÷ 275 (= 4(.14...)) **OR** "12" × 2 ÷ 3 **OR** for 275 × 8 (= 2200) **or** 275 × 9 (= 2475)	
		A1	cao	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
5	9.85	M1 A1	for $\sin(38) = \frac{AB}{16}$ oe **or** alternative method to find *AB* for an answer in the range 9.76 to 9.92	
6	8.3 and 8.4	B1 B1	for 8.3 in the correct position for 8.4 in the correct position	 Accept $8.3\dot{9}$ or 8.399…
7	168	P1 P1 P1 A1	for working with ratio to find the amount for C or D eg 1.5 × 2 (=3) or (A, B, C, D =) 2 , 7 , 3 , 3 oe **OR** for suitable expressions linking A with C or D, eg. A = x, C = 1.5x for "2 + 3 + 3 + 7" (=15) **OR** adds 4 suitable expressions, eg. "x + 3.5x + 1.5x + 1.5x" (= 7.5x) for a complete process to find the amount of money eg 360 ÷ "15"× 7 **OR** 360 ÷ "7.5" × 3.5 cao	
8 (a) (b)	5.62×10^{-3} 1452	B1 B1	cao cao	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 (a)	100 : 81	M1	for a scale factor of 0.9 oe used; **OR** for 10 : 9 oe **OR** 81 : 100 oe **OR** 81%	
		A1	for 100 : 81 oe	eg. 1 : 0.81, accept 1.23(4...) : 1
(b)	6 : 5	P1	for 1.44 oe used as the scale factor **or** 1.2 oe **OR** for 144 : 100 oe or $\sqrt{144} : \sqrt{100}$ oe **OR** 5 : 6 oe	
		A1	for 6 : 5 oe	eg 1.2 : 1, accept 1 : 0.83(3...)
10 (a)	Diagram completed 0.85 0.15, 0.85, 0.15, 0.85	M1	for 1 – 0.15 (=0.85)	
		A1	fully correct diagram	
(b)	0.2775	M1	for one correct product eg 0.15 × 0.15 (= 0.0225) or 0.15 × 0.85 (= 0.1275) or 0.85 × 0.85 (= 0.7225)	ft their diagram provided probabilities are less than 1
		M1	for a complete method eg “0.0225” + 2×”0.1275” **OR** 1 – “0.7225” oe	ft their diagram provided probabilities are less than 1
		A1	oe, eg $\frac{111}{400}$	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11 (a)	5, 35, 55, 70, 78, 80	B1	cao	
(b)	cf graph	M1	for 5 or 6 of their points plotted correctly from a cf table	Ignore to the left of the first point and right of the last point
		A1	for a fully correct graph SCB1 if 5 or 6 of their points plotted not at end but consistent within each interval and joined by a curve or line segments providing no gradient is negative	Accept a smooth curve or line segments
(c)	7.5	M1	for a clear method to read off the cf graph at 90	Sight of 74 or 6 implies M1
		M1	for a full method to find the percentage eg (80 − "74") ÷ 80 × 100 (=7.5)	The following readings give the following percentages
		A1	for 7.5 **or** ft cf graph	72 = 10% 73 = 8.75% 74 = 7.5% 75 = 6.25% 76 = 5%

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	25.4	P2	for finding the size of the angle eg $\frac{40\times360}{\pi\times7^2}$ (=93.5(4..)) **or** for working with proportion, eg $\frac{40}{49\pi}$ (=0.259(8…) or 0.26) **or** $\frac{49\pi}{40}$ (=3.84(8…) or 3.85)	
		(P1	for finding the area of the circle eg $\pi \times 7^2$ (=153(.938..) or 154))	May be embedded
		P1	(dep on P2) for a process to find the arc length, eg $\frac{"93.5(4...)"}{360} \times \pi \times 2 \times 7$ (=11.4(28…)) **or** $\frac{40}{49\pi} \times \pi \times 2 \times 7$ (=11.4(28…)) **or** $\pi \times 2 \times 7 \div \frac{49\pi}{40}$ (=11.4(28…))	
		A1	for answer in the range 25 to 25.44	If an answer is shown in the range in working and then incorrectly rounded award full marks. Accept $\frac{178}{7}$

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13	$\frac{7x-13}{x-2}$	B1	for factorising eg $(x+5)(x-2)$	
		M1	for a method to divide $(x+5)$ by the algebraic fraction eg $(x+5) \times \frac{(x-1)}{x^2+3x-10}$	Condone incorrect factorising
		M1	for finding 2 fractions with a common denominator or a single fraction eg $\frac{6(x-2)}{x-2}+\frac{(x-1)}{x-2}$ **or** $\frac{6(x-2)+(x-1)}{x-2}$ **or** $\frac{6(x^2+3x-10)}{x^2+3x-10}+\frac{(x+5)(x-1)}{x^2+3x-10}$ **or** $\frac{6(x^2+3x-10)+(x+5)(x-1)}{x^2+3x-10}$	Condone incorrect factorising
		A1	$\frac{7x-13}{x-2}$	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
14 (a)(i)	0.83	B1	for a tangent drawn at $t = 15$	Working: $7.5 \div 9 = 0.83....$ No tangent scores 0 marks
		M1	full method to use the tangent to find the gradient (eg $7.5 \div 9$)	This mark can be awarded if the tangent is drawn at $t \neq 15$ Working may be seen on the diagram
		A1	for answer in the range 0.6 to 1.0	
(ii)	Statement	C1	statement **Acceptable examples** acceleration rate of change of speed increase in speed over time **Not acceptable examples** rate of change m/s/s increase in speed	
(b)	220	P1	for splitting the area into strips and correct process to find the area of one strip, eg $\frac{5 \times 4}{2}$ (=10) **or** $\frac{(4+12)}{2} \times 5$ (=40) **or** $\frac{(12+18)}{2} \times 5$ (=75) **or** $\frac{(18+20)}{2} \times 5$ (=95)	Working 4, 12, 18, 20
		P1	for a complete process using at least 4 strips to find the area under the curve eg, "10" + "40" + "75" + "95"	Allow one error in the reading of speeds
		A1	for answer in the range 215 to 225 from correct working using at least 4 strips	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	$m = \frac{f+4}{f-3}$	M1	for multiplying both sides by $m - 1$, eg. $f(m - 1) = 3m + 4$	Condone missing brackets for this mark only
		M1	(dep) for a method to rearrange the formula to isolate terms in m in a correct equation, eg. $fm - 3m = f + 4$ **or** $-fm + 3m = -f - 4$	
		A1	for $m = \frac{f+4}{f-3}$ oe, eg $m = \frac{-f-4}{-f+3}$	
16	$y = -\frac{3}{4}x - \frac{11}{4}$	M1	for identifying gradient of $\frac{4}{3}$	Ignore constant term
		M1	for beginning a method to find the gradient of the perpendicular line eg $\frac{4}{3} \times m = -1$ **or** identifies gradient of perpendicular line as $-\frac{3}{4}$	Can ft providing gradient is clearly stated
		A1	for $y = -\frac{3}{4}x - \frac{11}{4}$ or any equivalent equation	$4y + 3x = -11$ $y + 5 = -\frac{3}{4}(x - 3)$

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 (a)	Explanation	C1	For stating the LCM of (4+7) and (5+3) is 88 **or** there is no smaller multiple of 8 and 11 (than 88)	
(b)	23	P1	for using a scale factor appropriately eg 4 × 8 (=32) **or** 3 × 11 (=33) **or** 7 × 8 (=56) **or** 5 × 11 (=55) **or** for writing a pair of suitable fractions, eg $\frac{7}{11}$ and $\frac{3}{8}$ **or** $\frac{4}{11}$ and $\frac{5}{8}$ **or** $\frac{3}{8}$ and $\frac{4}{11}$	May be seen in a two-way table or probability tree
		P1	for finding the number of large cubes and red cubes **or** small and yellow **or** small and red eg 7 × 8 (=56) and 3 × 11 (=33) **or** 4 × 8 (=32) and 5 × 11 (=55) **or** 4 × 8 (=32) and 3 × 11 (=33) **OR** a suitable fractional equation, eg $\frac{7}{11} - x = \frac{3}{8}$ **or** $\frac{5}{8} - x = \frac{4}{11}$ **or** $x = 1 - \frac{3}{8} - \frac{4}{11}$ **OR** a suitable pair of probabilities with a common denominator, eg $\frac{56}{88}$ and $\frac{33}{88}$ **or** $\frac{32}{88}$ and $\frac{55}{88}$ **or** $\frac{33}{88}$ and $\frac{32}{88}$	May be seen in a two-way table or probability tree $\frac{23}{88}$ scores P2A0
		A1	cao	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	75° with reasons	M1	for finding angle $BAD = \frac{180-40}{2}$ (= 70) **or** angle $BDA = \frac{180-40}{2}$ (= 70)	Could be shown on the diagram or in working
		M1	for finding angle BCD = 180 – "70" (=110) or $40 + x + 70 + x = 180$	
		A1	for finding angle ADE = 75	
		C2	(dep M2) for Opposite angles of a cyclic quadrilateral add up to 180 **and** one other reason; all reasons given must be appropriate for their working Base angles of an isosceles triangle are equal Angles in a triangle add up to 180, Angles on a straight line add up to 180 [**or** exterior angle of a cyclic quadrilateral is equal to the interior opposite angle]	Underlined words need to be shown; reasons need to be linked to their method
		(C1	(dep M2) for Opposite angles of a cyclic quadrilateral add up to 180, **or** all other reasons given appropriate for their working)	Apply the above criteria

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	31.0	P1	for tan 35 = *BE* ÷ 15 or *BE* =10.5(0...) **OR** finding the length DM = $\frac{2}{5}\times 15(=6)$ **or** MA = $\frac{3}{5}\times 15(=9)$ **or** 6:9 **OR** showing the required angle on a diagram eg with an arc	$MB = \sqrt{9^2+15^2} = \sqrt{306}$ (=17.4(9…) or 17.5) *BE* = 15×tan35 (=10.5(0…)) *AE* = 15÷cos35 (=18.3(1…)) $ME = \sqrt{9^2+18.31\ldots^2} = \sqrt{416.(3\ldots)}$ (=20.4(0…))
		P1	for $MB = \sqrt{15^2 + \text{“}9\text{”}^2}$ or $\sqrt{306}$ or 17.4(9....) **OR** $ME = \sqrt{\text{"}9\text{"}^2 + \text{"}18.3(1\ldots)\text{"}^2}$ or $\sqrt{416.(3\ldots)}$ or 20.4(0…)	Check diagram for working
		P1	for using appropriate trigonometry ratio to set up an equation in angle *EMB* eg tan θ = “10.5(0...)” ÷ “17.4(9...)” **or** cos θ = “17.4(9…)” ÷ “20.4(0…)” **or** sin θ = “10.5(0…)” ÷ “20.4(0…)”	
		A1	for answer in the range 30.9 to 31	If an answer is shown in the range in working and then incorrectly rounded award full marks.

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20 (a)	2**a**	M1	for **a** – **b** + **a** + **b** (=2**a**)	
		A1	cao	
(b)	4	P1	for a process to find $\overrightarrow{MF}$= −0.5**b**−**a**−(**a**−**b**) (=0.5**b**−2**a**) **or** $\overrightarrow{CE}$= **a** + **b** **or** $\overrightarrow{FM}$ = **a**−**b**+**a**+0.5**b** (=2**a**−0.5**b**)	Accept ft from (a) providing vectors are clearly stated
		P1	For finding a suitable vector expression for **two** of ($\overrightarrow{CE}$ or $\overrightarrow{EC}$), ($\overrightarrow{CX}$ or $\overrightarrow{XC}$) or ($\overrightarrow{EX}$ or $\overrightarrow{XE}$) eg, $\overrightarrow{CX}$ = **a** +0.5**b**+ $\frac{1}{n+1}$ (0.5**b**−2**a**) **or** $\overrightarrow{CX}$ = −**a** + **b** + $\frac{n}{n+1}$(2**a**−0.5**b**) $\overrightarrow{XE}$ = $\frac{1}{n+1}$ (2**a** −0.5**b**) + 0.5**b** **or** $\overrightarrow{XE}$ = $\frac{n}{n+1}$(0.5**b** – 2**a**) + 2**a** **or** $\overrightarrow{XC}$ = $\frac{n}{n+1}$(0.5**b**−2**a**)+**a**−**b** **or** $\overrightarrow{XC}$ = $\frac{1}{n+1}$ (2**a** – 0.5**b**) – 0.5**b** − **a** **or** $\overrightarrow{EX}$ = −0.5**b**+$\frac{1}{n+1}$(0.5**b**−2**a**) **or** $\overrightarrow{EX}$ = –2**a** + $\frac{n}{n+1}$(2**a** – 0.5**b**)	$\overrightarrow{CX}$ = $\frac{n-1}{n+1}$**a** + $\frac{n+2}{2(n+1)}$**b** $\overrightarrow{XE}$ = $\frac{2}{n+1}$ **a** + $\frac{n}{2(n+1)}$**b** $\overrightarrow{XC}$ = $\frac{1-n}{n+1}$ **a** + $\frac{-n-2}{2(n+1)}$**b** $\overrightarrow{EX}$ = $\frac{-2}{n+1}$ **a** − $\frac{n}{2(n+1)}$**b**
		P1	for complete process to equate the coefficients of **a** and **b** eg $\frac{n-1}{n+1}$ = $\frac{n+2}{2(n+1)}$	
		A1	cao	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
			ALTERNATIVE	
		P1	for a process to find $\overrightarrow{MF} = -0.5\mathbf{b} - \mathbf{a} - (\mathbf{a} - \mathbf{b})$ $(=0.5\mathbf{b} - 2\mathbf{a})$ **or** $\overrightarrow{CE} = \mathbf{a} + \mathbf{b}$ **or** $\overrightarrow{FM} = \mathbf{a} - \mathbf{b} + \mathbf{a} + 0.5\mathbf{b}$ $(=2\mathbf{a} - 0.5\mathbf{b})$	Accept ft from (a) providing vectors are clearly stated
		P1	For finding two suitable vector expressions for $\overrightarrow{FX}$ eg $\overrightarrow{FX} = \frac{n}{n+1}(2\mathbf{a} - 0.5\mathbf{b})$ **and** $\overrightarrow{FX} = \mathbf{a} - \mathbf{b} + k\mathbf{a} + k\mathbf{b}$	
		P1	for complete process to equate the coefficients of **a** and **b** eg $\frac{2n}{n+1} - 1 = 1 - \frac{n}{2(n+1)}$	
		A1	cao	

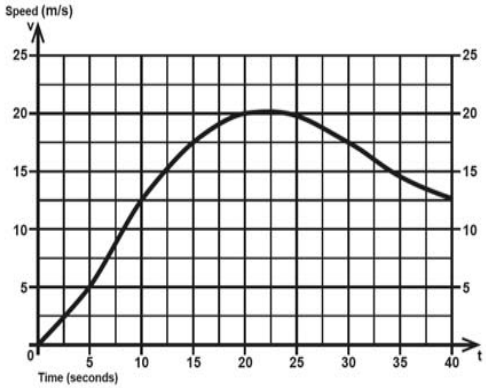
Modifications to the mark scheme for Modified Large Print (MLP) papers: 1MA1 2H

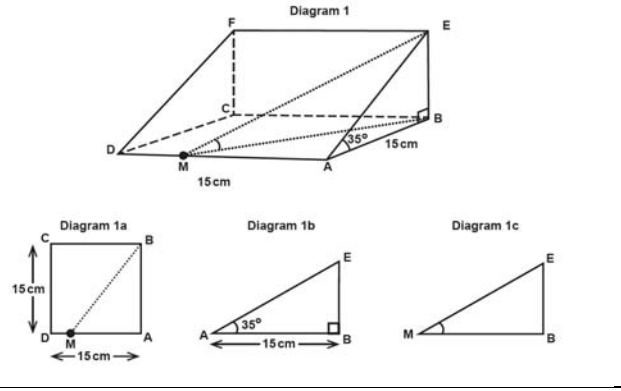
Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme.

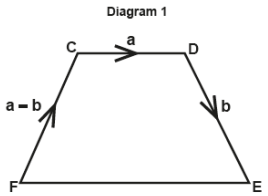
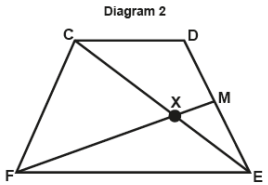
The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5°
Measurements of length: ±5 mm

PAPER: 1MA1/2H			
Question		**Modification**	**Mark scheme notes**
1	(b)	Diagram enlarged. Wording 'below' removed.	Standard mark scheme
2		Diagram enlarged. Wording 'below' removed.	Standard mark scheme
4		Diagram enlarged. Wording changed to 'It shows a container in the shape of a cuboid with length 30 cm, width 6 cm and height 19 cm.' Second 19 cm label added on the left of the diagram. Dashed line and 'Water' added.	Standard mark scheme
5		Diagram enlarged. Angle moved outside of the angle arc and the angle arc made smaller. Wording added: 'AC = 16 cm Angle ACB = 38° Angle ABC is a right angle.'	Standard mark scheme
9		Braille only: 'A' to 'P', 'B' to 'Q', 'E' to 'S', 'F' to 'T', 'e' and 'f' to 's' and 't'.	Standard mark scheme but note changes of letters for Braille.
10		Diagram enlarged. Braille only- spaces labelled (i) to (v).	Standard mark scheme

PAPER: 1MA1/2H			
Question		**Modification**	**Mark scheme notes**
11		Numbers in the frequency column now: 5, 25, 20, 15, 10, 5 (a) Wording added 'There are six spaces to fill.' (b) Diagram enlarged. Right axis labelled. Axis labels moved to the left of the horizontal axis and above the vertical axis.	(a) B1 for 5, 30, 50, 65, 75, 80 (b) use standard mark scheme (c) M1 for a clear method to read off the graph at 90 M1 for a full method to find the percentage eg (80 − "70") ÷ 80 × 100 (=12.5) A1 for an answer in the range 12.5 or ft their diagram
12		Diagram enlarged	Standard mark scheme

PAPER: 1MA1/2H			
Question		**Modification**	**Mark scheme notes**
14		Wording added 'It shows a graph.' Diagram enlarged. Graph line made thicker. Axis labels moved to the left of the horizontal axis and above the vertical axis. Right axis labelled. Graph line moved: Graph line changed to go through: (5,5), (10,12.5), (15,17.5), (20,20), (30,17.5)  	(a)(i) B1 for a tangent drawn at $t = 15$ M1 full method to use the tangent to find the gradient (eg 7.5÷9) A1 for answer in the range 0.6 to 1.0 (a)(ii) use standard mark scheme (c) use standard mark scheme leading to an answer of approx. 225 or in the range 215 to 235 Strips: 12.5 + 43.75 + 75 + 93.75
18		Diagram enlarged. Angle moved outside of the angle arc and the angle arc made smaller.	Standard mark scheme

PAPER: 1MA1/2H			
Question		**Modification**	**Mark scheme notes**
19		Model may be provided for candidates. Enlarged diagram for MLP. Three extra diagrams added and labelled 1a, 1b and 1c. See screen shot below. Wording added: ‘Diagram 1 shows’, ‘shown in diagram 1a’, ‘Diagram 1b shows the face ABE.’, ‘Diagram 1c shows triangle *MBE*.’  	Standard mark scheme

PAPER: 1MA1/2H			
Question		**Modification**	**Mark scheme notes**
20	(a)	Original diagram enlarged/changed and labelled as Diagram 1.  	Standard mark scheme for both parts.
	(b)	A second diagram added for part (a) and labelled as Diagram 2. Wording added 'Below diagram 1, diagram 2 shows the same quadrilateral CDEF.' Line CXE added to diagram 2.  	

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