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# **Mark Scheme (Results)**

**Summer 2018**

**Pearson Edexcel GCSE (9 – 1)**  
**In Mathematics (1MA1)**  
**Higher (Calculator) Paper 3H**

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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.  $2 \times 6 (=12)$  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"  $\times$  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]  $\times$  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

|              |  |
|--------------|--|
| <b>M</b>     | method mark awarded for a correct method or partial method   |
| <b>P</b>     | process mark awarded for a correct process as part of a problem solving question   |
| <b>A</b>     | 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) |
| <b>C</b>     | communication mark   |
| <b>B</b>     | unconditional accuracy mark (no method needed)   |
| <b>oe</b>    | or equivalent  |
| <b>cao</b>   | correct answer only  |
| <b>ft</b>    | follow through (when appropriate as per mark scheme)   |
| <b>sc</b>    | special case   |
| <b>dep</b>   | dependent (on a previous mark)   |
| <b>indep</b> | independent  |
| <b>awrt</b>  | answer which rounds to   |
| <b>isw</b>   | ignore subsequent working  |

| Paper: 1MA1/3H |                                   |  |  |  |   |
|----------------|-----------------------------------|--|--|--|---|
| Question       | Answer                            | Mark                                       | Mark scheme  | Additional guidance  |   |
| 1              | (a)<br><br><br>(b)<br><br><br>(c) | negative<br><br>Explanation<br><br>Comment | B1<br><br>C1<br><br>C1   | cao<br><br>for a correct explanation,<br>eg “not in line with the trend of the other points”<br>“does not fit in with the correlation”<br>“is far away from the other points or line of best fit”<br><br>for an explanation<br>eg “point would be outside of the range of the scatter diagram” | Ignore any description of a relationship and any reference to strength of correlation |
| 2              | $9p + 13$                         | M1<br><br>A1                               | for method to expand one bracket,<br>eg $5 \times p + 5 \times 3 (= 5p + 15)$<br>or $2 \times 1 - 2 \times 2p (= 2 - 4p)$ or $-2 \times 1 - 2 \times -2p (= -2 + 4p)$<br><br>cao   | If an attempt is made to multiply by $-2$ in the second brackets then it must be done consistently.  |   |
| 3              | Triangle of area<br>18            | M1<br><br>A1                               | for a complete method to find area of trapezium<br>eg $\frac{1}{2}(2 + 7) \times 4 (= 18)$<br><b>OR</b> for a triangle drawn of area 36<br><b>OR</b> for a triangle that would give an area ft their area of trapezium<br><br>for a triangle drawn of area 18<br>eg base = 6, height = 6 or base = 9, height = 4 | The value for the area of the trapezium must be clear for the ft to be checked.<br><br>Accept use of dimensions that are not whole numbers as long as the intention is clear   |   |

| Paper: 1MA1/3H |                               |                      |   |   |
|----------------|-------------------------------|----------------------|---|---|
| Question       | Answer                        | Mark                 | Mark scheme   | Additional guidance   |
| 4              | Probabilities should sum to 1 | C1                   | for stating that the probabilities should total 1<br>eg 0.25 should be 0.35   | Can be shown on the diagram   |
|                | 0.35 and 0.65 reversed        | C1                   | for recognising that the 0.35 and 0.65 in the first branches for the 2nd throw should be reversed<br>eg, “for the second throw, the probability it lands on 4 should be 0.65”   |   |
| 5              | (a)                           | 50.5                 | M1<br>for $\cos ABC = \frac{7}{11}$ (0.63...) oe  | Must be a complete statement for cos, sin or tan with all three elements present.<br><br>If an answer is in the range 50.4 to 50.51 is given in the working space then incorrectly rounded, award full marks. |
|                |                               | A1                   | for answer in the range 50.4 to 50.51   |   |
|                | (b)                           | Increase (supported) | C1<br>States increase with supporting reason<br>eg “ $\frac{7}{10}$ is greater than $\frac{7}{11}$ ”<br>“0.636 is less than 0.7”<br>...“cos increases as angle decreases”<br>“decreasing the denominator increases the value of the fraction”<br>“angle is now 45.6” (accept 45.5 – 45.6) | If figures are given they must be correct (truncated or rounded).   |

| Paper: 1MA1/3H |             |      |   |  |
|----------------|-------------|------|---|--|
| Question       | Answer      | Mark | Mark scheme   | Additional guidance  |
| 6 (a)          | 8           | P1   | <p>for process to find sum of unknown probabilities, eg <math>1 - 0.45 - 0.25 (= 0.3)</math></p> <p><b>OR</b> to find the total number of counters in the bag, eg <math>\frac{18}{0.45} (= 40)</math></p> <p><b>OR</b> to find the number of yellow counters, eg <math>\frac{0.25}{0.45} \times 18 (= 10)</math></p>                                    | <p>Award mark for any two probabilities given that sum to 0.3 eg given in the table.</p> <p>Award P2 for P(red) or P(white) (could be shown in table)</p> <p>Equations could be given as written statements or working but must be fully equivalent.</p> |
|                |             | P1   | <p>for process to find P(red) = 0.2 oe <b>or</b> P(white) = 0.1 oe</p> <p><b>OR</b> for process to find the total number of red and white counters, eg “40” – 18 – “10” (=12)</p> <p><b>OR</b> for process to derive an equation in <math>x</math>, eg <math>2x + x = 1 - 0.45 - 0.25</math> or <math>2x + x = “0.3”</math> or <math>x = 0.1</math></p> |  |
|                |             | P1   | <p>for a complete process to find the number of red counters, eg <math>\frac{2 \times 0.1}{0.45} \times 18</math> or <math>\frac{2}{3} \times “12”</math> or <math>0.2 \times “40”</math> or <math>\frac{0.2}{0.025}</math></p>   |  |
|                |             | A1   | cao   |  |
| (b)            | Explanation | C1   | <p>for explanation</p> <p>eg 0.5 multiplied by an odd number will never be a whole number, for half of a number to be an integer that number must be even, you can't have half a marble</p>   |  |



| Paper: 1MA1/3H |        |      |  |  |
|----------------|--------|------|--|--|
| Question       | Answer | Mark | Mark scheme  | Additional guidance  |
| 7              | 3.8    | M1   | for a correct first step,<br>eg $5 - x = 2(2x - 7)$ or $5 - x = 4x - 14$ or $\frac{5}{2} - \frac{x}{2} = 2x - 7$ | Method must show LHS $\times 2$ and both terms on RHS $\times 2$ or $5 - x$ and both terms on RHS $\times 2$ |
|                |        | M1   | (dep) for isolating terms in $x$<br>eg $4x + x = 14 + 5$ or $-\frac{x}{2} - 2x = -7 - \frac{5}{2}$               | eg $-4x$ both sides with $-5$ both sides<br>or $+x$ both sides with $+14$ both sides                         |
|                |        | A1   | oe   | Accept $\frac{19}{5}$ , $3\frac{4}{5}$ oe but not $\frac{-19}{-5}$ oe  |



**Paper: 1MA1/3H**

| Question | Answer             | Mark | Mark scheme  | Additional guidance  |
|----------|--------------------|------|--|--|
| 9 (a)    | $4.52 \times 10^3$ | M1   | for $2.04... \times 10^7$ oe<br>eg $2.04... \times 10^{-5} \div 10^{-12}$ or $20.4... \times 10^6$ or $204(08163.27)$<br><b>or</b> for correct value of $T$ , $4517.(53...)$ , not written in standard form, eg 4520   | May be given correct to 3 sig figs or more   |
| (b)      | Explanation        | M1   | for answer in the range $4.51 \times 10^3$ to $4.52 \times 10^3$<br><br>(SC B1 for $6.32... \times 10^{-1}$ )<br><br>for method to find the scale factor or decreased value in $T$ ,<br>eg $\sqrt{\frac{1.1}{1.05^3}}$ (= 0.97.....) oe or $\sqrt{\frac{5.6 \times 10^{-5} \times 1.1}{(1.4 \times 10^{-4} \times 1.05)^3}}$ (= $4.40... \times 10^3$ ) oe | Award mark for a correct method to calculate the scale factor or the percentage increases in $w$ and $d^3$ or the decreased value of $T$ |
|          |                    | C1   | (dep M1) for explanation<br>eg value of scale factor less than 1, so a decrease in $T$<br><b>OR</b> compares $4.40... \times 10^3$ with their value of $T$ from (a) provided answer to (a) is greater  | This mark may only be awarded if supported by numerical evidence   |
| 10       | 10                 | P1   | for start to a process to find the LCM of 20, 45 and 120 (= 360),<br>eg $45 = 3 \times 3 \times 5$ or $20 = 2 \times 2 \times 5$ or $120 = 2 \times 2 \times 2 \times 3 \times 5$<br>or writes down at least 3 multiples of 45 and 120   | Could be presented as complete prime factor trees for 45 or 120  |
|          |                    | P1   | (dep) for a process to find number of times/hour using their LCM,<br>eg $3600 \div 360$ or $3600 \div 720$   | Must use a common multiple.<br>Working may be in minutes.  |
|          |                    | A1   | for 10 or 11   |  |

| Paper: 1MA1/3H |             |                        |  |  |
|----------------|-------------|------------------------|--|--|
| Question       | Answer      | Mark                   | Mark scheme  | Additional guidance  |
| 11             | 150 000     | P1<br><br>P1<br><br>A1 | for process to find cost in 2007,<br>eg $162\,000 \div 0.9 (= 180\,000)$ oe<br><br>for process to find cost in 2003,<br>eg $[\text{cost in 2007}] \div 1.2 (= 150\,000)$ oe<br><br>cao   | Award 2 marks for $162\,000 \div 1.08$ oe  |
| 12 (a)         | 1.5         | M1<br><br>A1           | for method to find the gradient of the line, eg $\frac{12}{8}$<br><br>for 1.5 oe   | Must see use of scales.  |
| (b)            | Explanation | C1                     | Explanation relating to rate of change of volume with time,<br>eg rate at which the container fills or change in number of litres per second or number of litres added per second  | Ignore any quantities given.<br>Award the mark for an explanation involving rate.  |
| (c)            | Explanation | C1                     | Explanation relating to volume (amount) of liquid in the container at the start<br>eg number of litres in the container when $t = 0$ ,<br>amount of liquid in the container to start with  |  |
| 13             | 6.50        | M1<br><br>M1<br><br>A1 | for method to find ratio or scale factor of lengths or volumes<br>eg $\sqrt{3} : 2$ or $1 : 1.15(47\dots)$ or $0.86(60\dots) : 1$ or $\sqrt{27} : 8$ oe<br><br>for complete method to find ratio of volumes and use to find required volume<br>eg $10 \div ("1.15\dots")^3$ or $10 \times ("0.86\dots")^3$<br><br>for answer in the range 6.49 to 6.53 | Scale factors may just be seen as 1.15..., 0.86...etc<br><br>If an answer is given within the range then incorrectly rounded to 3 sig figs, award full marks. Accept 6.5 |

| Paper: 1MA1/3H |                           |                        |   |  |
|----------------|---------------------------|------------------------|---|--|
| Question       | Answer                    | Mark                   | Mark scheme   | Additional guidance  |
| 14             | 240                       | M1<br><br>A1           | for start to method to find total number of matches,<br>eg $16 \times 15$ or $16^2 - 16$ or $16 \times 15 \times 2 (= 480)$ or $\frac{16 \times 15}{2} (= 120)$<br><br>cao  | Credit complete listing strategies   |
| 15 (a)         | 488 to 507                | M1<br><br>M1<br><br>A1 | for method to find area of one strip using trapezia,<br>eg $\frac{1}{2} \times 5 \times 22 (= 55)$ or $\frac{1}{2} \times 5 \times (22 + 28) (= 125)$<br>or $\frac{1}{2} \times 5 \times (28 + 32) (= 150)$ or $\frac{1}{2} \times 5 \times (32 + 35) (= 167.5)$<br><b>OR</b><br>for a method to find an estimate for the area using rectangles<br>eg $5 \times 22$ or $5 \times 28$ or $5 \times 32$ or $5 \times 35$<br><br>for complete and correct method to find the area using four strips,<br>eg $\frac{1}{2} \times 5 \times 22 + \frac{1}{2} \times 5 \times (22 + 28) + \frac{1}{2} \times 5 \times (28 + 32)$<br>$+ \frac{1}{2} \times 5 \times (32 + 35)$<br>or $5 \times 22 + 5 \times 28 + 5 \times 32 + 5 \times 35$ | May use area of triangle + area of rectangle for the second, third and fourth strips – lengths must be correct.<br><br>May use triangle for first strip,<br>$\frac{1}{2} \times 5 \times 22$ |
| (b)            | Underestimate (supported) | C1                     | (dep M1) for underestimate since parts not included below the graph<br><b>OR</b> ft their method  | May use triangle for first strip,<br>$\frac{1}{2} \times 5 \times 22$  |

| Paper: 1MA1/3H |           |      |  |   |
|----------------|-----------|------|--|---|
| Question       | Answer    | Mark | Mark scheme  | Additional guidance   |
| 16 (a)         | 42        | P1   | for process to find an equation in $a$ and $b$ ,<br>eg $a \times 2^2 + b \times 2 = -2$ ( $4a + 2b = -2$ )<br>or $a \times 4^2 + b \times 4 = 12$ ( $16a + 4b = 12$ )                              | Allow one arithmetic error in elimination,<br>eg $16a + 8b = -8$ and $16a + 4b = 12$<br>leading to $4b = 20$ but no subtraction sign seen |
|                |           | P1   | for process to find a pair of simultaneous equations and eliminate one unknown,<br>eg $16a + 8b = -8$ and $16a + 4b = 12$ and subtraction<br>or $16a + 4b = 12$ and $8a + 4b = -4$ and subtraction |   |
|                |           | A1   | for $a = 2$ and $b = -5$   |   |
|                |           | A1   | cao  |   |
| (b)            | $n^2 - n$ | M1   | for correct method,<br>eg $n^2$ seen as a term   |   |
|                |           | A1   | for $n^2 - n$ oe   |   |

| Paper: 1MA1/3H |        |      |   |  |
|----------------|--------|------|---|--|
| Question       | Answer | Mark | Mark scheme   | Additional guidance  |
| 17             | 13.1   | P1   | for start of process to find the length of $BD$ ,<br>eg $\frac{BD}{\sin 34^\circ} = \frac{12.5}{\sin 109^\circ}$              | Accept 7.4 for the award of the first two P marks<br><br><br><br><br>If an answer is given within the range and then incorrectly rounded to 3 sig figs award full marks. |
|                |        | P1   | for complete process to find the length of $BD$ ,<br>eg $BD = \frac{12.5}{\sin 109^\circ} \times \sin 34^\circ (= 7.39\dots)$ |  |
|                |        | P1   | for process to find the length of $AD$ ,<br>eg $AD^2 = 11.4^2 + "7.39^2" - 2 \times 11.4 \times "7.39" \times \cos 86^\circ$  |  |
|                |        | P1   | for process to use correct order of operations,<br>eg $129.96 + 54.6(5\dots) - 11.7(5\dots) (= 172.85\dots)$                  |  |
|                |        | A1   | for answer in the range 13.1 to 13.2  |  |

| Paper: 1MA1/3H |        |                       |             |  |   |
|----------------|--------|-----------------------|-------------|--|---|
| Question       | Answer | Mark                  | Mark scheme | Additional guidance  |   |
| 18             | (a)    | Correct statement     | C1          | for substituting both 1 and 2 into $x^3 + x$ or into $x^3 + x - 7$   | All arithmetic shown must be correct.<br>Ignore any additional trials shown.<br><br>$x_1 = 1.70997\dots$<br>$x_2 = 1.74241\dots$<br>$x_3 = 1.73884\dots$<br>Accept an accuracy of 2 dp or more rounded or truncated for values of $x_1$ and $x_2$<br>Award the marks for 1.7 on the answer line provided correct iterations are shown in the working space. |
|                |        |                       | C1          | for values 2 and 10 plus explanation that these are above and below 7, or for values $-5$ and $3$ plus explanation that there is a change of sign, thus implying a solution lies between 1 and 2 |   |
|                | (b)    | Correct rearrangement | C1          | for correct algebraic rearrangement  |   |
|                | (c)    | 1.74                  | M1          | for substitution of 2 into the formula<br>eg $\sqrt[3]{7-2}$ ( $= 1.70997\dots$ )  |   |
|                |        |                       | M1          | for a substitution of $x_1$ to give $x_2$ ( $= 1.74241\dots$ )   |   |
|                |        |                       | A1          | for answer in the range 1.738 to 1.74  |   |



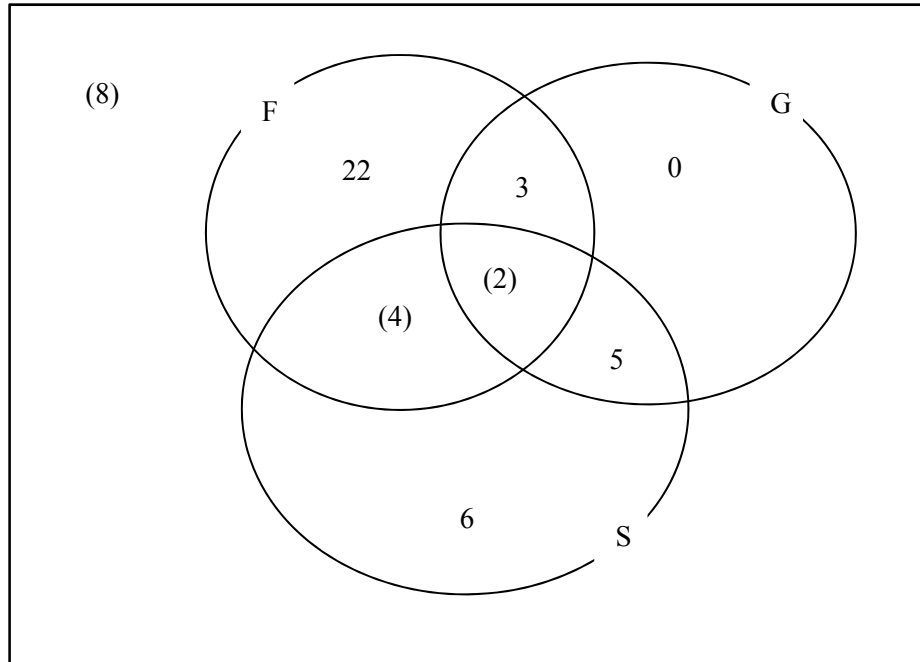
| Paper: 1MA1/3H |               |      |  |  |
|----------------|---------------|------|--|--|
| Question       | Answer        | Mark | Mark scheme  | Additional guidance  |
| 19             | $\frac{5}{3}$ | P1   | for process to derive an equation in $x$ ,<br>eg $\frac{x}{4x-1} = \frac{6x+5}{12x+31}$                            |  |
|                |               | P1   | for complete process to remove fractions,<br>eg $x(12x+31) = (6x+5)(4x-1)$   | Must be correct use of brackets  |
|                |               | P1   | for process to reduce to a quadratic equation,<br>eg $12x^2 - 17x - 5 = 0$   | Award for correct LHS only.  |
|                |               | P1   | for process to solve the quadratic equation by factorisation or use of quadratic formula,<br>eg $(4x+1)(3x-5) = 0$ | Award for correct LHS only.<br>Accept substitution into the formula;<br>$\frac{-17 \pm \sqrt{(-17)^2 - 4 \times 12 \times -5}}{2 \times 12}$ |
|                |               | A1   | for $\frac{5}{3}$ oe   | Accept answers in the range 1.66 to 1.67 as equivalent   |

**Paper: 1MA1/3H**

| Question | Answer          | Mark  | Mark scheme  | Additional guidance  |
|----------|-----------------|---|--|--|
| 20       | $\frac{6}{490}$ | <p>P1</p> <p>P1</p> <p>P1</p> <p>P1</p> <p>A1</p> | <p>for start to process information, eg draws Venn diagram and shows at least 1 unknown amount, eg 5 speak German and Spanish but not French</p> <p>for process to find at least 3 unknown amounts from,<br/>eg 5 speak German and Spanish but not French<br/>3 speak French and German but not Spanish<br/>22 speak French but not German or Spanish<br/>0 speak German but not French or Spanish</p> <p>for complete process to find number of people who speak only Spanish (= 6)</p> <p>for <math>\frac{[\text{number speaking Spanish only}]}{50} \times \frac{[\text{number speaking Spanish only}] - 1}{49}</math>,<br/>eg <math>\frac{6}{50} \times \frac{5}{49}</math></p> <p>for <math>\frac{6}{490}</math> oe</p> | <p>See Venn Diagram at end of mark scheme – rectangle not needed</p> <p>Award first 3 marks to students who show this on the Venn diagram or in a statement.<br/>Award this mark for use of their number of students who speak Spanish. Must be a clear link, eg from Venn diagram</p> <p>See note 8 in general marking guidance but 0.01 or 1% must be from seen correct working.</p> |

| Paper: 1MA1/3H |        |             |             |  |   |
|----------------|--------|-------------|-------------|--|---|
| Question       | Answer | Mark        | Mark scheme | Additional guidance  |   |
| 21             | (a)    | Proof       | C1          | for starting the proof, identifying a pair of relevant equal sides or angles with reasons from<br>$AD = BC$ (opposite sides of a parallelogram are equal)<br>angle $PAD =$ angle $QCB$ (opposite angles of a parallelogram are equal)<br>angle $ADP =$ angle $CBQ$ (given or both $90^\circ$ ) | Congruency conclusion must include a reference to ASA |
|                |        |             | C1          | (dep C1) for complete identification of all three equal aspects with reasons   |   |
|                |        |             | C1          | (dep C2) for conclusion of congruency proof  |   |
|                | (b)    | Explanation | C1          | for identifying a pair of equal sides or angles in $APCQ$ , with reason, eg $AP = QC$ since triangle $ADP$ is congruent to triangle $CBQ$  |   |
|                |        |             | C1          | (dep C1) for reasoning that $APCQ$ is a parallelogram so opposite sides of a parallelogram are parallel  |   |

Q20



## Modifications to the mark scheme for Modified Large Print (MLP) papers.

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:  $\pm 5^\circ$

Measurements of length:  $\pm 5$  mm

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| Paper: 1MA1/3H |   |                      |
|----------------|---|----------------------|
| Question       | Modification  | Mark scheme notes    |
| 1              | Diagram enlarged. Axes labels moved to the left of the horizontal axis and above the vertical axis.<br>Crosses changed to solid dots. Right axis has been labelled. | Standard mark scheme |

**Paper: 1MA1/3H**

| Question | Modification   | Mark scheme notes   |
|----------|--|---|
| 3        | <p>Shape changed but the area is still the same.<br/>                     Wording changed to ‘Look at the diagram for Question 21 in the Diagram Book.<br/>                     It shows a trapezium drawn on a grid of squares.<br/>                     Each square on the grid represents a 1 cm square.<br/>                     A triangle is going to be drawn that is equal in area to the trapezium.<br/>                     Write down the length of the base and the vertical height of a triangle that is equal in area to the trapezium.’<br/>                     Two answer lines have been provided.</p> <p style="text-align: center;"><b>Each square on the grid represents a 1 cm square.</b></p> | <p>M1 for a method to find area of trapezium, eg. <math>\frac{1}{2}(2 + 7) \times 4 (=18)</math> or <math>(2 \times 4) + (0.5 \times 5 \times 4)</math> or <math>8 + 10 (=18)</math> or for two answers that would give a triangle of area ft their area of trapezium (if not 18) or for two answers that would give a triangle of area 36<br/>                     A1 for two answers given that would give a triangle of area 18, eg. base = 6, height = 6 or base = 9, height = 4 oe<br/>                     NB: answers need not be whole numbers.</p> |
| 4        | Diagram enlarged. Wording added ‘It shows a probability tree diagram   | Standard mark scheme  |

**Paper: 1MA1/3H**

| Question | Modification   | Mark scheme notes  |
|----------|--|--|
| 5        | Diagram enlarged. Wording added 'AB = 11cm CB = 7cm<br>Angle ACB is a right angle. Angle ABC is marked.'   | Standard mark scheme   |
| 6        | Table has been turned to vertical format.<br>Order of the table changed round so it reads: blue, yellow, red and white.  | Standard mark scheme   |
| 8        | Diagram enlarged. Angles moved outside of the angle arcs, with smaller arcs.<br>Wording added 'Angle EAB = 125° Angle AED = 115° Angle EDC is a right angle.'  | Standard mark scheme   |
| 10       | Pictures removed.<br>Wording changed to 'There are three lamps, lamp A, lamp B and lamp C.'  | Standard mark scheme   |
| 12       | Diagram enlarged. Right axis has been labelled.<br>Axes labels moved to the left of the horizontal axis and above the vertical axis.   | Standard mark scheme   |
| 13       | Pictures removed. Wording added 'shape A and shape B.'   | Standard mark scheme   |
| 15       | Diagram enlarged. Right axis has been labelled.<br>Axes labels moved to the left of the horizontal axis and above the vertical axis.   | Standard mark scheme, but apply MLP tolerances when reading figures from the graph (extra tolerance needed). |
| 17       | Diagram enlarged. Angles moved outside of the angle arcs, and the arcs have been made smaller.<br>Wording added 'The diagram shows a shape labelled ABCD. AB = 11.4 cm, CD = 12.5 cm, Angle ABD = 86°, Angle DBC = 109°, Angle BCD = 34°.' | Standard mark scheme   |

**Paper: 1MA1/3H**

| <b>Paper: 1MA1/3H</b> |  |                          |
|-----------------------|--|--------------------------|
| <b>Question</b>       | <b>Modification</b>  | <b>Mark scheme notes</b> |
| 19                    | Diagrams enlarged. Angles moved outside of the angle arcs, and the arcs have been made smaller.<br>Braille will label the triangles and add information about the measurements of the triangles. | Standard mark scheme     |
| 21                    | Diagram enlarged. Arrows made longer.<br>Wording added 'ABP and QDC are straight lines and parallel.', 'AD is parallel to BC.'   | Standard mark scheme     |





