



Pearson
Edexcel

Mark Scheme (Results)

October 2021

Pearson Edexcel iLower Secondary
In Year 9 Mathematics (LMA11)
Paper 01

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Year 9 iLower Secondary Mathematics

Section A

| Question number | Answer | Mark |
|-----------------|---------------|------|
| 1 | B - $5b - 2c$ | (1) |

| Question number | Answer | Mark |
|-----------------|------------|------|
| 2 | C - Reflex | (1) |

| Question number | Answer | Mark |
|-----------------|--------------------|------|
| 3 | C - $\frac{2}{11}$ | (1) |

| Question number | Answer | Mark |
|-----------------|---------------|------|
| 4 | C - [segment] | (1) |

| Question number | Answer | Mark |
|-----------------|--------------------|------|
| 5 | D - No correlation | (1) |

| Question number | Answer | Mark |
|-----------------|--------|------|
| 6 | A - 2 | (1) |

| Question number | Answer | Mark |
|-----------------|----------|------|
| 7 | C - 8.28 | (1) |

| Question number | Answer | Mark |
|-----------------|--------|------|
| 8 | A - 50 | (1) |

| Question number | Answer | Mark |
|-----------------|--------------|------|
| 9 | D - 8^{18} | (1) |

| Question number | Answer | Mark |
|-----------------|---------|------|
| 10 | B - 300 | (1) |

| Question number | Answer | Mark |
|-----------------|--------|------|
| 11 | D - 36 | (1) |

| Question number | Answer | Mark |
|-----------------|--------------|------|
| 12 | A - (-2, -1) | (1) |

| Question number | Answer | Mark |
|-----------------|-----------------------|------|
| 13 | A - $\frac{246}{999}$ | (1) |

| Question number | Answer | Mark |
|-----------------|--------------------|------|
| 14 | B - $-\frac{1}{2}$ | (1) |

| Question number | Answer | Mark |
|-----------------|--------------|------|
| 15 | D - 8.9995km | (1) |

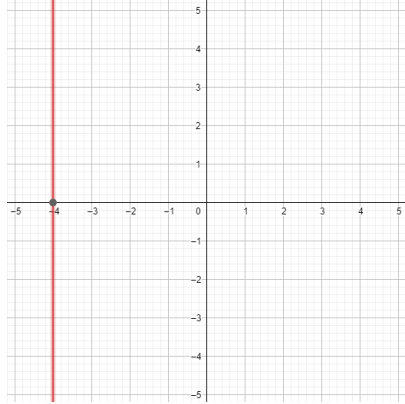
Section B

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---------|--------|---------------------|------|
| 16a | | 10.91 | B1 | (1) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------|-------------------------|------|
| 16b | $(9.44 + 10.44 + 7.22 + 10.91 + 8.69 + 17.78 + 10.91) \div 7$ $75.39 \div 7$ | 10.77 | M1 correct method A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---------|------------------------------------|---------------------|------|
| 17 | | Appropriate line of best fit drawn | B1 | (1) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------|--|------|
| 18a | $\left(\frac{-6 + 14}{2}, \frac{11 + -9}{2} \right)$ | (4, 1) | M1 correct method for at least one value (4,y) or (x,1) A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|-------------------------|---------------------|------|
| 18b |  | Graph of $x = -4$ drawn | B1 | (1) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------------------------|--|------|
| 19a | $47\% = 0.47 = \frac{470}{1000}$ oe $44.4\% = \mathbf{0.444} = \frac{444}{1000}$ oe $45\% = 0.45 = \frac{450}{1000} = \frac{9}{20}$ | 0.444 $\frac{9}{20}$ 47% | M1 for finding two comparable values M1 for finding three comparable values A1 | (3) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|-----------------|--------|---|------|
| 19b | $391 \div 1.15$ | 340 | M1 for 1.15 oe M1 for $\div 1.15$ oe A1 | (3) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|--------------------|--|------|
| 19c | $\$74 \times 0.93 (= \$68.82)$ $\$78 \times 0.88 (= \$68.64)$ | <i>Sale-Buster</i> | M1 for correct method to find new price in <i>Bargains</i> M1 for correct method to find new price in <i>Sale-Buster</i> A1 for correct decision and both new prices correct | (3) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|------------------|-------------------------------------|------|
| 20a | $25 + 1 + 6 = 32$ $48 \div 32 = 1.5$ $25 \times 1.5 : 1 \times 1.5 : 6 \times 1.5$ | 37.5 1.5 9 | M1 for $48 \div (25 + 1 + 6)$ A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|-------------|--------|-------------------------|------|
| 20b | $48 \div 5$ | 9.6 | M1 correct method A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark | | | | | | | | | | |
|-----------------|--|--------|---------------------|------|-----|---|----|---|----|---|---|---|--|-----|
| 21a | eg. <table border="1" style="margin-left: 20px;"> <tr><td></td><td>200</td></tr> <tr><td>2</td><td>100</td></tr> <tr><td>2</td><td>50</td></tr> <tr><td>2</td><td>25</td></tr> <tr><td>5</td><td>5</td></tr> </table> | | 200 | 2 | 100 | 2 | 50 | 2 | 25 | 5 | 5 | $2 \times 2 \times 2 \times 5 \times 5$ | M1 for correct decomposition with no more than one error A1 accept index notation | (2) |
| | 200 | | | | | | | | | | | | | |
| 2 | 100 | | | | | | | | | | | | | |
| 2 | 50 | | | | | | | | | | | | | |
| 2 | 25 | | | | | | | | | | | | | |
| 5 | 5 | | | | | | | | | | | | | |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------|---|------|
| 21b | 32: 1, 2, 4, 8, 16 , 32 80: 1, 2, 4, 5, 8, 10, 16 , 20, 40, 80 $32 = 2 \times 2 \times 2 \times 2 \times 2$ $80 = 2 \times 2 \times 2 \times 2 \times 5$ $2 \times 2 \times 2 \times 2 = \mathbf{16}$ | 16 | M1 for all factors of either number or for correct prime factor decomposition of both numbers A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---------------------|--------------|--|------|
| 22a | $20w - 12w^2 - 15w$ | $5w - 12w^2$ | M1 for expanding bracket correctly A1 | (2) |

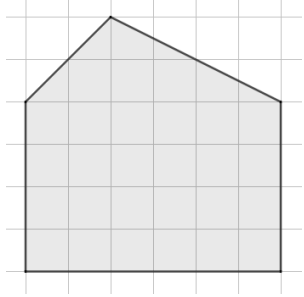
| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------|--------------------------------------|------|
| 22b | $7x - 11 = 9 \times 5$ $7x = 45 + 11$ $x = 56 \div 7$ | 8 | M1 for complete correct method A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|------------|--|------|
| 22c | $9y - 11 < 5y + 10$ $9y - 5y < 10 + 11$ $4y < 21$ | $y < 5.25$ | M1 for 5.25 or correctly isolating letter and number terms A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|-------------|---|------|
| 23 | $(\pi \times 36 \div 4) + (2 \times 18)$ $9\pi + 36$ | 64.2 – 64.3 | M1 for complete correct method, or for 9π with no evidence that it comes from incorrect working A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|--------|---------------------------------------|------|
| 24 | $(5 - 2) \times 180 = 540$ $140 + 140 + 90 + 90 = 460$ $540 - 460$ | 80 | M1 for “540” – “460” or for 540 A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---------|--|--|------|
| 25 | | [correct perpendicular bisector drawn] | B1 for two correct pairs of intersecting arcs B1 for correct perpendicular bisector | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|--------------------------------|--|------|
| 26 |  | Enlarged shape drawn correctly | B2 for correct shape drawn (B1 for three correct sides) | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---------|-----------|---|------|
| 27 | | $31 - 4n$ | M1 for $-4n$ A1 Accept: $27 - 4(n - 1)$ | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|-------------------------------------|-------------|--|------|
| 28 | $t^2 = \frac{k}{5c}$ $5ct^2 = k$ | $k = 5ct^2$ | M1 for squaring both sides as the first step A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|--------|---|------|
| 29 | eg. $d + d + 38 + d - 21$ $3d + 17 (= 158)$ $3d = 141$ $d = 141 \div 3$ | 47 | M1 for forming a correct expression A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|----------------------------|--------------------|--|------|
| 30 | $3100 + 24\,000 = 27\,100$ | 2.71×10^4 | M1 for 27100 oe or 2.71×10^x A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark | | | | | | | | | | | | |
|-----------------|--|----------|---------------------|------|------|-----|------|-----|------|-----|-----|--------------|-------------|--------|--|-----|
| 31 | <table border="1"> <thead> <tr> <th><i>h</i></th> <th><i>fh</i></th> </tr> </thead> <tbody> <tr> <td>155</td> <td>2635</td> </tr> <tr> <td>165</td> <td>1815</td> </tr> <tr> <td>175</td> <td>1750</td> </tr> <tr> <td>185</td> <td>370</td> </tr> <tr> <td>Total</td> <td>6570</td> </tr> </tbody> </table> $6570 \div 40$ | <i>h</i> | <i>fh</i> | 155 | 2635 | 165 | 1815 | 175 | 1750 | 185 | 370 | Total | 6570 | 164.25 | M1 for $f \times h$ (where h is a consistent point in each class interval) M1 (dep) for ' Σfh ' \div ' Σf ' A1 | (3) |
| <i>h</i> | <i>fh</i> | | | | | | | | | | | | | | | |
| 155 | 2635 | | | | | | | | | | | | | | | |
| 165 | 1815 | | | | | | | | | | | | | | | |
| 175 | 1750 | | | | | | | | | | | | | | | |
| 185 | 370 | | | | | | | | | | | | | | | |
| Total | 6570 | | | | | | | | | | | | | | | |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|--------|---|------|
| 32 | $17 \times 52 = 884$ $9 \times 74 = 666$ $884 - 666 = 218$ $218 \div 8$ | 27.25 | M1 for 17×52 AND 9×74 M1 $((17 \times 52) - (9 \times 74)) \div 8$ A1 | (3) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|------------------|----------------------------------|------|
| 33a | $4^2 + 6^2 = 16 + 36 = 52$ $\sqrt{52} = 2\sqrt{13}$ | 7.2(11102551...) | M1 for $\sqrt{4^2 + 6^2}$ A1 | (2) |
| 33b | $18^2 - 6^2 = 324 - 36 = 288$ $\sqrt{288} = 12\sqrt{2}$ | 16.9(7056275...) | M1 for $\sqrt{18^2 - 6^2}$ A1 | (2) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|---|----------------------|--|------|
| 34 | $3c + 2d = 7.90$ $5c + 4d = 14.30$ $6c + 4d = 15.80$ $5c + 4d = 14.30$ $c = 1.50$ $3 \times 1.50 + 2d = 7.90$ $4.50 + 2d = 7.90$ $2d = 3.40$ $d = 1.70$ | 1.5(0) 1.7(0) | M1 for forming two appropriate simultaneous equations M1 for correct method to eliminate one variable M1 correct method to find the other variable A1 | (4) |

| Question number | Working | Answer | Additional guidance | Mark |
|-----------------|--|-------------|--|------|
| 35 | eg. $\tan x = 4/5$ $x = \tan^{-1}(0.8) = 38.659\dots$ $\tan y = 3/2$ $y = \tan^{-1}(1.5) = 56.309\dots$ $38.659\dots + 56.309\dots$ | 94.9 – 95.0 | M1 $\tan 'x' = 4/5$ M1 $\tan^{-1}(4/5)$ M1 $\tan 'y' = 3/2$ M1 $\tan^{-1}(3/2)$ A1 for correct answer from correct working (do NOT accept 95 without evidence of trigonometry) | (5) |

