



Cambridge Lower Secondary Checkpoint

MATHEMATICS

1112/01

Paper 1

October 2020

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

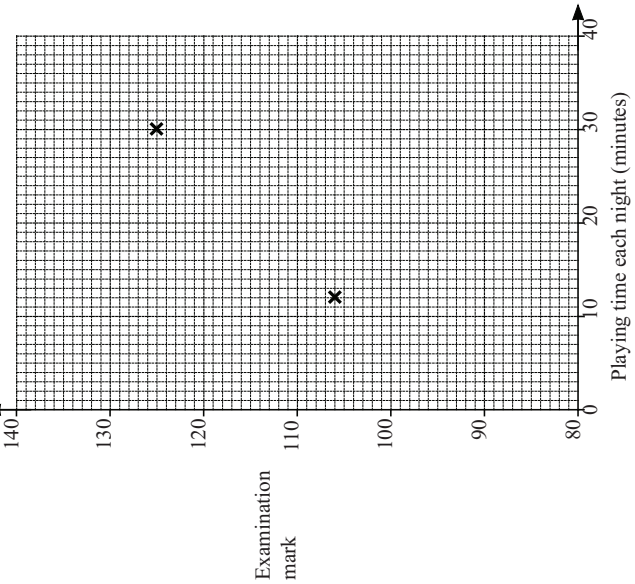
This document has **12** pages. Blank pages are indicated.

Mark scheme annotations and abbreviations

| | |
|-----------|----------------------------|
| M1 | method mark |
| A1 | accuracy mark |
| B1 | independent mark |
| FT | follow through after error |
| dep | dependent |
| oe | or equivalent |
| cao | correct answer only |
| isw | ignore subsequent working |
| soi | seen or implied |


| Question | Answer | Marks | Further Information |
|----------|----------------------------|----------------|----------------------------|
| 1 | -23 (°C) | 1 | |
| 2 | | 2 | |
| 3 | 2 or 3 correct (-1, -2) | B1 1 | Both correct for the mark. |

| Question | Answer | Marks | Further Information |
|----------|---------------------------|-------|--|
| 4(a) | $\frac{3}{10}$ cao | 1 | Do not accept equivalent decimals or percentages. |
| 4(b) | 70(%) cao | 1 | Do not accept equivalent decimals or fractions. |
| 5 | m ² kg l | 1 | |

| Question | Answer | Marks | Further Information |
|--------------|---|----------|--|
| 6 (a) | <p>Both points plotted in correct positions, i.e.</p>  | 1 | error = 0 marks, e.g. extra point plotted |
| 6 (b) | <p>A response that indicates that there is a positive correlation between the variables, e.g.</p> <ul style="list-style-type: none"> ● positive correlation ● students who play longer score higher marks | 1 | <p>Accept positive relationship. Do not accept 'positive' on its own.</p> |

| Question | Answer | Marks | Further Information |
|-------------------|--|-------|--|
| 7 | $6\frac{1}{7}$ | 1 | |
| 8 | $2(n+1)$ | 1 | Accept equivalent expressions e.g. $2n+2$, $(n+1) \times 2$ Do not accept formulae or equations |
| 9 | (square numbers are) 9 and 36 and (factors of 18 are) 2 and 9 and (multiples of 4 are) 20 and 36 | 3 | Accept reversed in each line. |
| 10 | (square numbers are) 9 and 36 | B1 | |
| | (factors of 18 are) 2 and 9 | B1 | |
| | (multiples of 4 are) 20 and 36 | B1 | |
| | (10^2) 10^4 10^6 10^5 | 2 | |
| 2 correct answers | B1 | | |

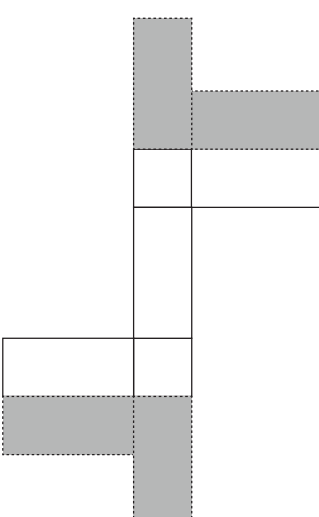
| Question | Answer | Marks | Further Information |
|----------|---|-------|--|
| 11(a) | 1152 | 1 | |
| 11(b) | 1.104 | 1 | |
| 11(c) | 480 | 1 | |
| 12 | f^5 and $6g^3$ | 2 | |
| | f^5 or $6g^3$ | B1 | |
| 13 | <p>mark out of 10 on a test</p> <p>time taken to run a marathon</p> <p>mass of a bag of oranges</p> <p>average speed of a journey</p> <p>number of books sold</p> | 1 | Accept any clear indication of the two correct responses selected. |

| Question | Answer | Marks | Further Information |
|--------------|--|-----------|--|
| 14 | 132 | 2 | |
| | $24 \div \frac{2}{11}$ or better | M1 | e.g. $\frac{24}{1} \div \frac{2}{11}$, $\frac{264}{11}$, $\frac{2}{11} \div \frac{2}{11}$, $24 \times \frac{11}{2}$, $\frac{264}{2}$ |
| 15(a) | <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> | 1 | Accept any unambiguous indication. |
| 15(b) |  | 1 | Accept any unambiguous indication. |
| 16 | $\frac{7}{33}$ | 2 | |
| | $\frac{105}{495}$ or $\frac{21}{99}$ or $\frac{26}{33}$ or $\frac{35}{165}$ | B1 | |

| Question | Answer | Mark | Further Information |
|---------------|---|-----------|---|
| 17 (a) | 2 and 6 in table. | 1 | |
| 17 (b) | Line drawn between $(-4, -2)$ and $(0, 6)$ plotting $(-4, -2)$ and <i>their</i> points from (a) or for a line with gradient 2 or for a line crossing the y -axis at 6 | B1 | |
| 17 (c) | x between -2.4 and -2.5 and y between 1.1 and 1.2 or FT x and y values from <i>their</i> point of intersection accurate within 1 small square. | 1 | Condone values in range from an algebraic solution e.g. $-2\frac{3}{7}$ and $1\frac{1}{7}$ |
| 18 | 7 (cm) $3(3x + 4) = 57$ oe | 3 | |
| | $2x + 2 + a = 3x + 4$ oe or better | M1 | oe could be e.g. $9x + 12 = 57$ $3x + 4 = 19$ $6x + 8 = 38$ $3x = 15$ $x = 5$ |
| | | M1 | oe could be e.g. $3x + 4 - (2x + 2) = a$ $2x + 2 + a = 19$ $6x + 6 + 3a = 57$ $12 + a = 19$ $8x + 10 + a = 57$ $a = x + 2$ implied by $x + 2$ on the answer line or diagram. Allow their numerical x for x in each case e.g. $2 \times$ <i>their</i> $x + 2 + a = 19$ |

| Question | Answer | Marks | Further Information |
|---------------|--|-----------|--|
| 19 (a) | Multiply by -2 or | 1 | Accept equivalent rule, e.g. multiply by 2 and then change the sign. Accept $x - 2$ Do not accept: <ul style="list-style-type: none"> • use of variable e.g. $-2n$, $-2x$ • double and add a negative sign |
| 19 (b) | -96 and 192 | 1 | Both correct for 1 mark. No FT |
| 20 | 52 | 2 | |
| 21 | either 16 associated with white or 24 associated with red or for $(r : w : y) = 6 : 4 : 3$ (or equivalent) or for sight of any multiple of 13 | B1 | |
| | | 2 | Accept another label if it is clear that it refers to alternate / corresponding. |
| | 1 correct label | B1 | Accept another label if it is clear that it refers to alternate / corresponding. |

| Question | Answer | Marks | Further Information |
|---------------|---|-----------|---|
| 22 | 0.2295 (m ²) | 2 | |
| | 0.0705 or 3000 seen | B1 | |
| 23 | $5b(2a - b)$ | 2 | |
| | Partial factorisation $5(2ab - b^2)$ or $b(10a - 5b)$ or $5b(2a - b)$ in working | B1 | |
| 24 (a) | C' plotted at (3, 5) | 1 | Ignore lack of label if position is clear. The sides of the triangle do not need to be drawn for the mark to be awarded. |
| 24 (b) | (enlargement) (scale factor) 2 and (centre) (1, 1) | 2 | e.g. enlargement of 2 at (1, 1) Combinations of transformations score 0 |
| | One element of the description. | B1 | |

| Question | Answer | Marks | Further Information |
|------------------|---|-----------------|---|
| <p>25</p> | <p>Ticks Children and gives a correct reason, e.g.</p> <ul style="list-style-type: none"> • The mode/ median/ mean/ average for children is higher. • The chart for children is centred more to the right. • More children ate a large amount of fruit. • Most adults didn't eat very much fruit. • Children ate 105 portions adults ate 56 | <p>1</p> | <p>Do not accept 'children eat more fruit.'</p> <p>Values may be seen by graph. If values are found, they must be correct: Adults: mode 2, median 2, mean $\frac{105}{30}$ or 3.5</p> <p>Children: mode 3, median 3, mean $\frac{56}{30}$ 1.867 (which may be rounded or truncated further e.g. 1.9)</p> |
| <p>26</p> | <p>Any one of the four possible positions, i.e. one of the shaded faces shown.</p>  | <p>1</p> | |