

Cambridge Assessment International Education Lower Secondary Checkpoint Mathematics Past Papers

**0862 – Marking Scheme
2023 - Now**



Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/01

Paper 1

April 2023

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 **14** pages. Any blank pages are indicated.

Mark scheme annotations and abbreviations

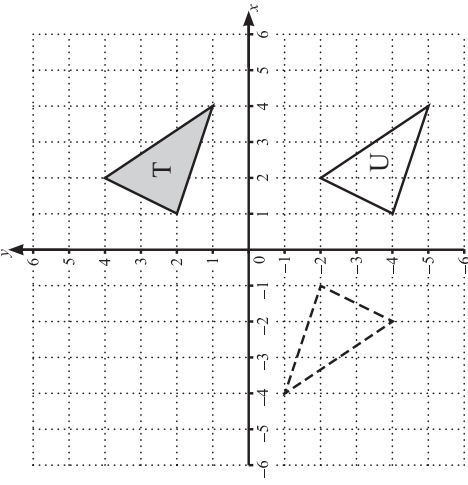
M1	method mark
A1	accuracy mark
B1	independent mark
FT	follow through after error
dep	dependent
oe	or equivalent
cao	correct answer only
isw	ignore subsequent working
soi	seen or implied

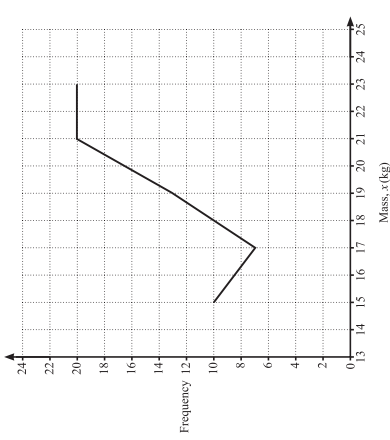
Question	Answer	Marks	Part marks	Guidance								
1	☐ ☒ ☐ ☒ ☐ ☐	1		Both answers correct for the mark. Accept any clear indication.								
2	10	1		$\frac{10}{60}$ scores 0 marks but ‘10 out of 60’ scores 1 mark.								
3	<table><tr><td>Equal to 7^6</td><td>Not equal to 7^6</td></tr><tr><td>B C</td><td>(A) D</td></tr></table>	Equal to 7^6	Not equal to 7^6	B C	(A) D	1		All three answers correct for the mark. Accept calculation in place of letter, i.e. <table><tr><td>Equal to 7^6</td><td>Not equal to 7^6</td></tr><tr><td>$7^5 \times 7$ $7^6 \div 7^0$</td><td>(7×6) $7^2 \times 7^3$</td></tr></table>	Equal to 7^6	Not equal to 7^6	$7^5 \times 7$ $7^6 \div 7^0$	(7×6) $7^2 \times 7^3$
Equal to 7^6	Not equal to 7^6											
B C	(A) D											
Equal to 7^6	Not equal to 7^6											
$7^5 \times 7$ $7^6 \div 7^0$	(7×6) $7^2 \times 7^3$											
4	$c^2 + 14c + 40$	2	Award 1 mark for three correct out of these terms: $c^2 + 4c + 10c + 40$	For 1 mark, terms may be seen in a grid. Note $14c$ counts as two terms.								
5	<table><tr><td>5×10^{-1}</td><td>0.005</td></tr><tr><td>0.05×10^4</td><td>0.5</td></tr><tr><td>$5 \div 10^{-3}$</td><td>500</td></tr><tr><td>$0.5 \div 10^2$</td><td>5000</td></tr></table>	5×10^{-1}	0.005	0.05×10^4	0.5	$5 \div 10^{-3}$	500	$0.5 \div 10^2$	5000	1		All three lines correct for the mark.
5×10^{-1}	0.005											
0.05×10^4	0.5											
$5 \div 10^{-3}$	500											
$0.5 \div 10^2$	5000											
6	16	2	Award 1 mark for correctly calculating the value of the bracket as 2	1 mark implied by 2^4								

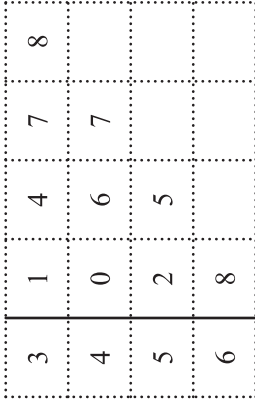
Question	Answer	Marks	Part marks	Guidance
7	340 (cm ²)	2	Award 1 mark for [area of base =] 10×10 or $100 \text{ [cm}^2\text{]}$ or [area of triangular face =] $0.5 \times 10 \times 12$ or $60 \text{ [cm}^2\text{]}$ or better.	Any attempt at a volume calculation scores 0 marks. The area of a triangular face can be implied by [total of triangular faces =] $4 \times 0.5 \times 10 \times 12$ or $240 \text{ [cm}^2\text{]}$
8	$\sqrt{30}$	1		Accept any clear indication.
9	A correct explanation, e.g. - There are no numbers on the axes/graph. - There is no label on the horizontal axis. - There is no time frame. - The line is very thick. - The line is not the same thickness throughout.	1		Ignore excess statements that are correct provided they are not contradictory. Accept equivalent answers, e.g. - There are no years given. - The number of people is not given. - The line thickness is decreasing. - The y-axis is not numbered. - There is no scale. Do not accept these statements alone: - No points are plotted. - There is no x-axis. - It does not start at 0/the beginning. - There is no information. - The y-axis is not labelled. - Because it is a curve. - The line is decreasing.
10	3	1		Do not accept $\frac{1}{3}$ or 'less than 5'

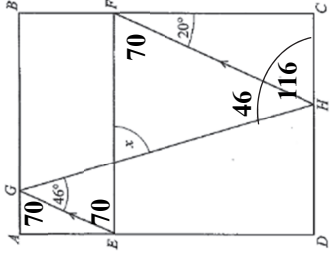
Question	Answer	Marks	Part marks	Guidance
11(a)	7×10^4	1		
11(b)	0.0075	1		
12	A correct explanation, e.g. The radiuses used for each arc are not the same.	1		Accept equivalent answers, e.g. • She should have used 5 cm for the arc centred on B. • She should not have changed the compass setting. • Both arcs should have the same radius. Do not accept these statements alone: • It does not produce a line in the centre of line AB (this does not explain why). • They are uneven (this is too vague).
13	$w = y^2 + 2$	1		Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
14(a)	5	1		Do not accept equivalent fractions, e.g. $\frac{105}{21}, \frac{5}{1}$
14(b)	$\frac{3}{8}$ – cao	3	Award 2 marks for $\frac{9}{10} \times \frac{5}{12}$ or $\frac{9}{10} \div \frac{24}{10}$ oe or answer 0.375 or Award 1 mark for sight of $\frac{12}{5}$ or $\frac{5}{12}$ or $\frac{24}{10}$ or $\frac{9}{10} \times \frac{5}{12}$ <i>their</i>12 or 0.9 and 2.4	2 marks can be implied by $\frac{9}{24}$ or $\frac{45}{120}$ or equivalent fraction. oe 2 marks for e.g. $\frac{45}{50} \div \frac{120}{50}, \frac{108}{120} \times \frac{50}{120}$ For 1 mark, accept equivalents. $\frac{their12}{5}$ must be shown first.
15	32 [GB] (smallest) 500 000 [MB] 1 [TB] (largest)	1		Accept correct equivalent converted values on the answer lines, e.g. 32 GB, 500 GB, 1000 GB

Question	Answer	Marks	Part marks	Guidance
16(a)	Triangle at $(2, -2), (1, -4), (4, -5)$. 	2	Award 1 mark for first rotation correct or for correctly rotating <i>their</i> first triangle 180° about $(0, -3)$ provided it fits on the grid or for getting two vertices of triangle U correct.	Ignore labels. Mark intention. <i>Their</i> first triangle does not have to be congruent to triangle T for this rotation.
16(b)	translation	1	FT from <i>their</i> U if possible.	Accept any clear indication. For the FT: <i>their</i> U must be congruent to T for the answer reflection or rotation, e.g. a right-angled triangle cannot score <i>their</i> U must be on the grid - you must be convinced it is a transformation of triangle U, e.g. it could be labelled U, there could be two triangles with the first one correct.

Question	Answer	Marks	Part marks	Guidance
17(a)	$20 \leq x < 22$	1		Accept any clear indication.
17(b)	Correct frequency polygon at (15, 10), (17, 7), (19, 13), (21, 20), (23, 20). 	2	Award 1 mark for five connected consecutive points with the correct vertical plots (but incorrect horizontal plots) or four or five correctly plotted points (with or without connecting lines).	For 1 or 2 marks - ignore attempts to join to the axes for $x \leq 15$ or $x \geq 23$ but not horizontal lines - ignore any bars drawn - mark intention - treat extra points as choice (but mark the polygon first, their lines indicate the points they want us to mark) - ends of lines may imply points.
18(a)	54	1		
18(b)	$n^2 - 1$	1		Accept correct unsimplified equivalent answers, e.g. $n \times n + - 1$

Question	Answer	Marks	Part marks	Guidance
19	Two points satisfying all three conditions: - Negative x-coordinate. y-coordinate which is multiple of 4 - On the line $y = 5 - 3x$. e.g. $(-1, 8)$, $(-5, 20)$, $(-9, 32)$, $(-13, 44)$ $(-17, 56)$, $(-21, 68)$, $(-25, 80)$.	2	Award 1 mark for one correct point or for correct values, e.g. $x = -1$ and $y = 8$ shown but coordinates not correctly written, e.g. $(8, -1)$ or $(x = -1, y = 8)$.	All three conditions must be correct for any marks. The x -coordinate does not have to be an integer, e.g. $\left(-2\frac{1}{3}, 12\right)$, $\left(-3.\dot{6}, 16\right)$, $\left(-\frac{19}{3}, 24\right)$ etc. would each score a mark. Note they should not use rounded decimals (as they would not lie on the straight line.) For the recurring notation accept, e.g. -2.3r , $-2.\bar{3}$ but not, e.g. $-2.33\dots$
20	A correct diagram with - a key including mm - a stem containing the numbers 3 to 6 in numerical order - correct ordered leaves.  Key: 3 1 = 31 mm	2	Award 1 mark for a diagram that has either a correct key including mm or has a stem containing the numbers 3 to 6 in numerical order.	For 2 marks (provided other criteria are met) or for 1 mark - accept stem in descending order - ignore extra stems - the key does not need to be based on the value 31 mm.

Question	Answer	Marks	Part marks	Guidance
21	64(°)	2	Award 1 mark for finding any of these angles: • $EFH = 70$ • $GHF = 46$ • $GEF = 70$ • $GHC = 116$ • $AGE = 70$ or for $180 - 70 - 46$ or	Check diagram for evidence of angles, e.g.  or any correct method, e.g. $180 - (90 - 20) - 46$
22	17.9(°C)	2	Award 1 mark for 0.015 [per minute] or for finding a correct rate of increase, e.g. • 0.3 each 20 minutes • 0.9 per hour • 0.15 each 10 minutes • 0.75 each 50 minutes or for a fully correct method, e.g. • rate per minute $\times 120 + 16.1$ • rate per hour $\times 2 + 16.1$	1 mark for the rate could be implied by working such as • [increase =] 0.3×6 or 1.8 • a correct gradient calculation, e.g. $\frac{0.3}{20}$ • a correct calculation of a temperature at a time at or after 60 minutes, e.g. 17(°C) at 60 minutes (or 10 am). They must show the calculation leading to their rate which arises from an inaccurate reading from the graph, e.g. $\frac{16.2 - 16.1}{5} \times 120 + 16.1$ (using 16.2 instead of using 16.175) gradient from triangle on graph $\times 120 + 16.1$

Question	Answer	Marks	Part marks	Guidance																				
23	84	3	Award 2 marks for 24 and 60 seen or for 24 identified as the number of red counters or for fully correct method, e.g. $42 \div (3 + 4) \times 4 \times \frac{7}{2}$ oe or Award 1 mark for $42 \div (3 + 4) \times k$ where $k = 1, 3$ or 4 or for finding at least one ratio equivalent to $3 : 4$ or $5 : 2$	Number of red counters can be implied by, e.g. • $k : 24$ shown • $24 + k = \textit{their}$ answer (working must be shown) • 60 identified as the number of green counters in Angelique’s jar • $[3] : 4 : 7$ and $[18] : 24 : 42$ Fully correct method likely to be done in stages. 1 mark implied by, e.g. 18, $42 \div 7 = 6$ or $\begin{array}{c} 3 : 4 \\ \times 6 \end{array}$ but not 6 alone. e.g. $9 : 12, 10 : 4$																				
24	$a = 2 \quad b = 5 \quad h = 7$ or $a = 3 \quad b = 4 \quad h = 7$	2	Award 1 mark for a set of values of a, b and h which are greater than 0 and for which $(a + b)h = 49$ but does not satisfy other criteria.	For 1 mark, e.g. <table><tr><td>$a = 1$</td><td>$b = 6$</td><td>$h = 7$</td><td>Helpful products:</td></tr><tr><td>$a = 5$</td><td>$b = 2$</td><td>$h = 7$</td><td>$2 \times 24.5 = 49$</td></tr><tr><td>$a = 4$</td><td>$b = 3$</td><td>$h = 7$</td><td>$4 \times 12.25 = 49$</td></tr><tr><td>$a = 1$</td><td>$b = 3.9$</td><td>$h = 10$</td><td>$5 \times 9.8 = 49$</td></tr><tr><td>$a = 1$</td><td>$b = 48$</td><td>$h = 1$</td><td>$8 \times 6.125 = 49$</td></tr></table> Negative lengths score 0 marks.	$a = 1$	$b = 6$	$h = 7$	Helpful products:	$a = 5$	$b = 2$	$h = 7$	$2 \times 24.5 = 49$	$a = 4$	$b = 3$	$h = 7$	$4 \times 12.25 = 49$	$a = 1$	$b = 3.9$	$h = 10$	$5 \times 9.8 = 49$	$a = 1$	$b = 48$	$h = 1$	$8 \times 6.125 = 49$
$a = 1$	$b = 6$	$h = 7$	Helpful products:																					
$a = 5$	$b = 2$	$h = 7$	$2 \times 24.5 = 49$																					
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$a = 1$	$b = 48$	$h = 1$	$8 \times 6.125 = 49$																					

Question	Answer	Marks	Part marks	Guidance
25	4.5	3	Award 2 marks for a correct equation which does not have x in a denominator and which has no brackets, e.g. $12 = -15 + 6x$ or $\frac{12}{-3} = 5 - 2x$ or better. or Award 1 mark for $12 = -3(5 - 2x)$.	Accept equivalent, e.g. $\frac{9}{2}$ for 3 marks. Or better, e.g. $2x = 5 - \frac{12}{3}$ Do not accept a misread which makes it easier, e.g. 3 for -3 for 2 marks. However, you can award the 1 mark. The misread may be implied by $12 = 3(5 - 2x)$ or better, e.g. $12 = 15 - 6x$, $x = 0.5$

Question	Answer	Marks	Part marks	Guidance
26	0.34	4	Award 3 marks for $[x =] \frac{6}{25}$ or $[x =] 0.24$ oe or for $\frac{1 - 0.3 - 0.1}{1 + 1.5} + 0.1$ oe or Award 2 marks for $\frac{1 - 0.3 - 0.1}{1 + 1.5}$ oe or Award 1 mark for forming a correct equation, e.g. $0.3 + 0.1 + x + 1.5x = 1$ oe or for $1 - 0.3 - 0.1$ oe or for <i>their</i> $x + 0.1$ provided <i>their</i> answer is between 0.1 and 1	Accept equivalent fractions or percentages for $\frac{17}{50}$ oe, or for part marks. Equivalent fractions to $\frac{16}{25}$ or 0.34 should not include decimals. Award 2 marks for $\frac{0.6}{2.5}$ seen. oe, e.g. $0.4 + 2.5x = 1$, $2.5x = 0.6$, $30\% + 10\% + x + 1.5x = 100\%$ 1 mark implied by 0.6 oe seen anywhere. <i>Their</i> x does not have to come from correct working but needs to be clearly identified, e.g. if not equated to x they could write it underneath or next to the x in the table. Implied by their answer being 0.1 greater than <i>their</i> x.

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Paper 2

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MARK SCHEME

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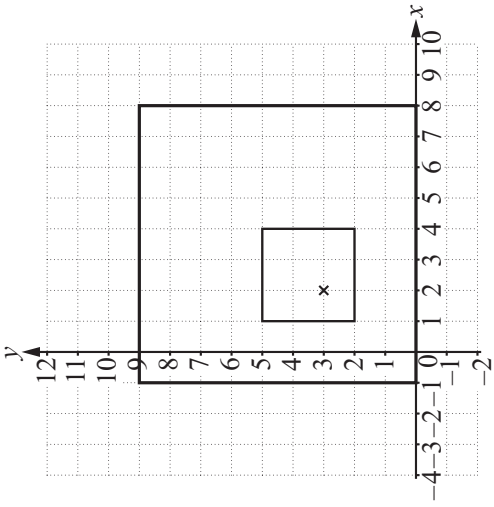
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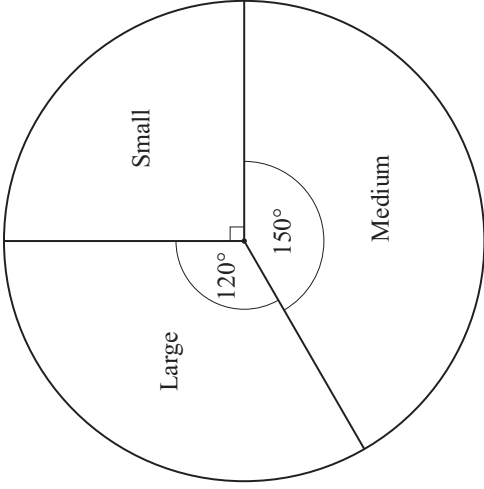
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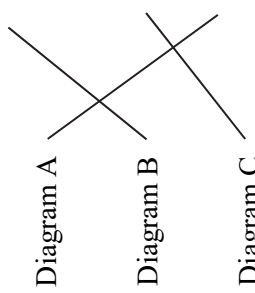
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B1	independent mark
FT	follow through after error
dep	dependent
oe	or equivalent
cao	correct answer only
isw	ignore subsequent working
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	$x^2 \text{ (cm}^2\text{)}$	1		Do not accept $x \times x$
2	$238 \text{ (cm}^2\text{)}$ or $237.6 \text{ to } 237.9 \text{ (cm}^2\text{)}$	2	Award 1 mark for $\pi \times 8.7^2$	Accept 75.69π or 75.7π for 2 marks. Accept values for π between 3.14 and $\frac{22}{7}$
3	$1 : 5$	1		Accept any clear indication.
4	8^2 and $\frac{19}{6}$ (are rational numbers) $\sqrt{19}$ and π (are irrational numbers)	1		Both sentences correct for the mark. The two rational values and the two irrational values can be written in either order.
5	Coordinates of square at $(-1, 0)$, $(-1, 9)$, $(8, 0)$, $(8, 9)$. 	2	Award 1 mark for two vertices of image correctly positioned or if image has the correct size and shape but is wrongly positioned on the grid.	0 marks if the image does not fit on the grid.

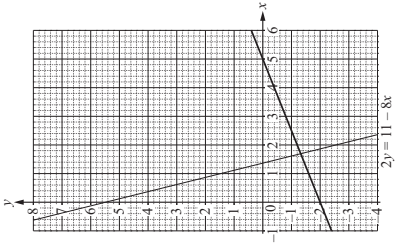
Question	Answer	Marks	Part marks	Guidance
6	Correct pie chart with - angle for Medium = 150° - angle for Large = 120° - sectors correctly labelled as Medium and Large, e.g. 	3	Award 2 marks for sight of 150° or 120° or for a sector of 150° or 120° drawn. or Award 1 mark for $\frac{360}{6 + 10 + 8} \times k$ where $k = 1, 6, 8$ or 10 or for $\frac{10}{24}$ oe 42% or 0.42 or $\frac{8}{24}$ oe 33% or 0.33 or better or for accurately drawing a sector with <i>their</i> calculated angle size. or $\frac{10}{6} \times 90$ oe $\frac{8}{6} \times 90$ oe	Accept tolerance of $\pm 2^\circ$. For 2 marks, accept $\frac{150}{360}$ or $\frac{120}{360}$ The size of the angles do not need to be marked on the pie chart or shown at all if diagram is in tolerance. Implied by 15°. Accept more accurate decimals and percentages, e.g. 41.6%, 0.417, 0.3 <i>Their</i> angle must be clearly shown.
7	<i>a and d</i>	1		Both answers correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance																									
8	 Diagram A Strong positive Diagram B Weak positive Diagram C No correlation Weak negative Strong negative	1		All three lines correct for the mark.																									
9	Correct demonstration that the two probabilities are equal, e.g. Correctly completed sample space diagram or listing all the outcomes for each event and Finding each probability is $\frac{6}{16}$ or noting that there are 6 outcomes for each.	3	Award 2 marks for a correctly completed table or listing all the outcomes for each event. or Award 1 mark for a table with at least 10 correct entries or for listing all the outcomes for either of the two events or for $\frac{6}{16}$ or seen.	<table border="1"> <tr> <td>+</td><td>1</td><td>3</td><td>5</td><td>6</td></tr> <tr> <td>2</td><td>(3)</td><td>5</td><td>7</td><td>8</td></tr> <tr> <td>3</td><td>4</td><td>6</td><td>(8)</td><td>9</td></tr> <tr> <td>4</td><td>5</td><td>7</td><td>9</td><td>(10)</td></tr> <tr> <td>6</td><td>7</td><td>9</td><td>11</td><td>12</td></tr> </table> Score even: 4, 6, 8, 8, 10, 12 Total greater than eight: 9, 9, 9, 10, 11, 12 oe, e.g. $\frac{3}{8}$, 0.375 Note saying that there are the same number of even numbers as there are numbers greater than 8 is insufficient, the 6 is required. An incorrect statement following correct working invalidates the final mark, e.g. there are 6 outcomes for each so the probability is $\frac{6}{36}$ for each.	+	1	3	5	6	2	(3)	5	7	8	3	4	6	(8)	9	4	5	7	9	(10)	6	7	9	11	12
+	1	3	5	6																									
2	(3)	5	7	8																									
3	4	6	(8)	9																									
4	5	7	9	(10)																									
6	7	9	11	12																									

Question	Answer	Marks	Part marks	Guidance
10(a)	B and C	1		Both answers correct for the mark. Accept any clear indication.
10(b)	900(°)	1		
11(a)	1450 ($\leq x <$) 1550	1		Both answers correct for the mark.
11(b)	9.875 (s)	1		Accept recurring 9s demonstrated by, e.g. '9.87499...' or 9.8749 or 9.8749' or 9.8749 but not a terminating decimal or '9.8749...' (there must be more than one 9 before the dots.)

Question	Answer	Marks	Part marks	Guidance
12(a)	A suitable reason, e.g. • It may not be [as] accurate [as method B]. • It is hard to measure your own pulse [accurately] using your fingers.	1		Accept equivalents, e.g. • He may not be able to find his pulse. • He may miscount. Do not accept these statements alone: • You can't count BPM using fingers. • Heart rate is not consistent. • You can't find your pulse after running.
12(b)	A correct reason, e.g. • People using a gym may not be representative of everybody his age. • People using a gym are likely to be fitter [or have different heart rates] than other people. • He is not sampling people who do not exercise. • The people at the gym may not be his age.	1		Accept equivalents, e.g. • Gym members are healthier. • They are likely to have a lower heart rate [as they are fitter]. (Assume 'they' refers to the 40 gym members.) Do not accept these statements alone: • 40 is a small sample. (Sample size not relevant.) • Everyone has different heart rates. (No recognition of the difference between gym/non-gym members.) • Other things affect heart rate like weight/age. (True, but no mention of sampling method.) • They may not all be doing the same exercise at the gym. • He may miscount for some/all. (This is referring to experimental method rather than sampling method.) Ignore excess comments.

Question	Answer	Marks	Part marks	Guidance
13(a)	$(-8) < (4n) \leq (20)$	1		Both answers correct for the mark.
13(b)	$-2 < n \leq 5$ final answer	2	Award 1 mark for -2 or 5 in an inequality.	FT using <i>their</i> inequality signs in (a) for 1 or 2 mark(s). For 2 marks, the inequality must have the correct structure with n in the centre, do not accept an incorrect structure for the FT for 2 marks, e.g. $-2 > n \leq 5$ would score 1 mark. $-2 < n \leq 5$ followed by integer solutions scores 1 mark.
14	(\$) 74.49	2	Award 1 mark for 62.5×1.04 oe or <i>their</i> 65×1.146 oe	oe, e.g. $62.50 + 0.04 \times 62.5$, $62.5 \times \frac{104}{100}$, 65 <i>Their</i> 65 could come from a slip in working, e.g. 62.5×1.4
15	$y = -2x + 6$	2	Award 1 mark for [gradient =] $-\frac{6}{3}$ oe or for $y = mx + 6$ where $m \neq 0$	For 2 marks, answers must be in the form $y = mx + c$ and m must be an integer. 1 mark implied by, e.g. $-2x$ but not -2 alone. m can be non-numerical.
16(a)	A correct demonstration that the first four terms sum to 1 e.g. $-0.7 + 1.2 - 0.7 + 1.2 = 1$	2	Award 1 mark for correctly applying the term-to-term rule once, e.g. finding 1.2 or for correct next term FT <i>their</i> previous term.	For 2 marks, terms can be in any order when adding.
16(b)	3 and 100	1		Both answers in the correct order for the mark.

Question	Answer	Marks	Part marks	Guidance
17	R marked 4.4 cm from L and on a bearing of 130° from S.	2	Award 1 mark for a bearing of 130° from S or an arc 4.4 cm from L.	Accept tolerance of $\pm 2^\circ$ for the bearing. Accept tolerance of ± 2 mm for the distance. 1 mark may be implied by a point on a bearing of 130° from S or a point 4.4 cm from L, if there is a choice of points mark the worst. Ignore a line drawn joining S to L.
18(a)	A ruled line connecting (0, -2) and (5, 0). 	2	Award 1 mark for (0, -2) or (5, 0).	Mark the line first. 1 mark implied by • either point plotted • a line passing through (0, -2) or (5, 0) • -2 entered correctly in the table • 5 entered correctly in the table.
18(b)	(x =) 1.6 to 1.8 and (y =) -1.4 to -1.2 or both values correct from <i>their</i> graph.	2	Award 1 mark for (x =) 1.6 to 1.8 or (y =) -1.4 to -1.2 or one value correct from <i>their</i> graph or x and y in tolerance but reversed.	FT for 1 or 2 marks from <i>their</i> straight line in part (a) provided there is a single point of intersection on the grid, $\pm \frac{1}{2}$ small square accuracy.
19	pentagon	1		Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
20	15 cao	3	Award 2 marks for 15.1 to 15.2 or $\pi \times \left(\frac{14}{2}\right)^2 \times 31 \div 315$ oe or Award 1 mark for $\pi \times \left(\frac{14}{2}\right)^2 \times 31$ oe or for dividing <i>their</i> volume by 315 or for truncating <i>their</i> final more accurate answer to an integer.	Accept values for π between 3.14 and $\frac{22}{7}$ throughout. May be in the working. Accept $\frac{217\pi}{45}$ for 2 marks. 1 mark can be implied by a volume between 4769 and 4774 or 1519π <i>Their</i> volume must be clearly from a value labelled as volume or from working that is an attempt at volume, e.g using an incorrect radius or a stray $\times 2$ or $\div 2$
21	245 and 125	3	Award 2 marks for 245 or 125 or Award 1 mark for 6 or –6 found or better or for finding a value of $5(\text{their } a + 1)^2$	Answers can be in either order. Implied if embedded, e.g. $6^2 \times 5 = 180$, Or better, e.g. –5 or 7 (even if, e.g. as answers or labelled as <i>a</i>).

Question	Answer	Marks	Part marks	Guidance
22	5.8 (cm)	4	Award 3 marks for $\sqrt{4^2 + (10.5 - \sqrt{6.5^2 - 1.6^2})^2}$ oe or better. or Award 2 marks for $[AE =] 10.5 - \sqrt{6.5^2 - 1.6^2}$ oe or better. or Award 1 mark for $BE^2 + 1.6^2 = 6.5^2$ oe or better or $[DE^2 =] 4^2 + \text{their } AE^2$ oe or better.	Marks may be awarded on the diagram. Or better, e.g. 3 marks for $\sqrt{4^2 + 4.2^2}$ This is likely to be done in stages, e.g. $[BE =] \sqrt{6.5^2 - 1.6^2}$ or 6.3 and $\sqrt{4^2 + (10.5 - 6.3)^2}$ Or better, e.g. $[AE =] 4.2$ $10.5 - \sqrt{39.69}$ Or better, e.g. $[BE =] 6.3$ $[BE^2 =] 6.5^2 - 1.6^2$, $[BE =] \sqrt{42.25 - 2.56}$ <i>Their AE</i> does not have to come from an attempt at Pythagoras but must clearly be <i>their</i> length for <i>AE</i>, e.g. labelled on the diagram. It could also be a result from using incorrect Pythagoras, e.g. $\sqrt{6.5^2 + 1.6^2}$, from $10.5 - k$.
23	$a = 10$ $b = 27$ or $a = 46$ $b = 125$	2	Award 1 mark for answers in these ranges: $2.92 \leq a < 3$ $b = 8$, or $9.855 \leq a < 10.125$ $b = 27$ or $23.36 \leq a < 24$ $b = 64$ or $45.625 \leq a < 46.875$ $b = 125$ or for an answer with: positive integers a and b and b is a cube number and the decimal equivalent rounds to 0.37 correct to 2sf, e.g. $a = 371$ $b = 1000$	e.g. common ones are: $a = 2.96$ $b = 8$ $a = 9.99$ $b = 27$ $a = 23.68$ $b = 64$ $a = 46.25$ $b = 125$

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Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/01

Paper 1

October 2023

MARK SCHEME

Maximum Mark: 50

Published

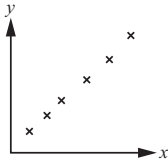
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which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

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This document has **12** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfw	not from wrong working
oe	or equivalent
soi	seen or implied

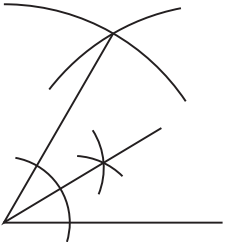
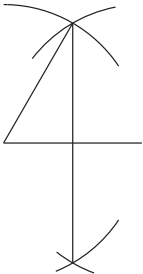
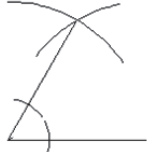
Question	Answer	Marks	Part Marks	Guidance								
1	40 (cm ³)	1										
2		1		Accept any clear indication.								
3	<table border="1" data-bbox="255 557 535 676"><tr><td>(4^3)</td><td>$(-2)^3$</td></tr><tr><td>$(-5)^2$</td><td>$\sqrt[3]{-8}$</td></tr></table>	(4^3)	$(-2)^3$	$(-5)^2$	$\sqrt[3]{-8}$	1		All three answers correct for the mark. Accept expressions evaluated, i.e. <table border="1" data-bbox="1498 652 1789 724"><tr><td>(4^3)</td><td>-8</td></tr><tr><td>25</td><td>-2</td></tr></table>	(4^3)	-8	25	-2
(4^3)	$(-2)^3$											
$(-5)^2$	$\sqrt[3]{-8}$											
(4^3)	-8											
25	-2											
4	(<) < > >	1		All three symbols correct for the mark.								
5	(t =) 9	1		Do not accept $\frac{36}{4}$								

Question	Answer	Marks	Part Marks	Guidance
6	$\frac{3}{8}$ oe	2	Award 1 mark for correct use of common denominators, e.g. $\left[\frac{9}{8} - \frac{1}{2} = \right] \frac{9}{8} - \frac{4}{8} \text{ oe or } \frac{5}{8} \text{ oe}$ or $\left[1 - \frac{9}{8} \right] = \frac{8}{8} - \frac{9}{8} \text{ oe or } -\frac{1}{8} \text{ oe}$ or $\left[1 \right] - \frac{9}{8} + \frac{4}{8} \text{ oe or } \left[1 \right] - \frac{5}{8}$ or $\left[1 + \frac{1}{2} = \right] \frac{2}{2} + \frac{1}{2} \text{ oe or } \frac{3}{2} \text{ oe}$ or 1 – <i>their</i> single fraction for $\left(\frac{9}{8} - \frac{1}{2} \right)$ correctly evaluated.	Accept 0.375 or equivalent fractions for 2 marks. For 1 mark, accept equivalent decimal work or other common denominators, e.g. $1.125 - 0.5 \text{ or } 0.625, \frac{18}{16} - \frac{8}{16} \text{ or } \frac{10}{16}$ 1 – 1.125 or –0.125 1 + 0.5 or 1.5
7	$4 < \sqrt{18} < 5$	1		Accept any clear indication.

Question	Answer	Marks	Part Marks	Guidance						
8	A correct improved estimate, e.g. 100 (×) 0.6 (=) 60	1		Accept improved estimates with at least one value rounded or truncated, e.g. • 100 (×) 0.615 (=) 61.5 • 100 (×) 0.5 (=) 50 • 104 (×) 0.6 (=) 62.4 • 104.4 (×) 0.6 (=) 62.64 • 104.3 (×) 0.6 (=) 62.58 • 100 (×) 0.61 (=) 61 • 104 (×) 0.5 (=) 52 • 105 (×) 0.5 (=) 52.5 (e.g. rounding to nearest 5/0.5) Accept with fractions, e.g. 100 (×) $\frac{6}{10}$ (=) 60 Note the answer must be correct for <i>their</i> rounded values.						
9	0.1	1		Accept equivalent fractions or 10%.						
10	<table><tr><td>Corresponding</td><td>Not corresponding</td></tr><tr><td>C</td><td>(A)</td></tr><tr><td>D</td><td>B</td></tr></table>	Corresponding	Not corresponding	C	(A)	D	B	1		All three answers correct for the mark. C and D can be in either order in the 'Corresponding angles' column.
Corresponding	Not corresponding									
C	(A)									
D	B									
11(a)	7×10^6	1								
11(b)	5.5×10^{-1} 6.4×10^{-1} 5.5×10^4	1		All three answers in the correct order for the mark. Accept written as 0.55, 0.64, 55 000 Mark intention.						

Question	Answer	Marks	Part Marks	Guidance
12		1		Accept any clear indication.
13(a)	☒ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.
13(b)	4	1		Accept any clear indication.
14(a)	Any multiple of 4 greater than 7 e.g. 8	1		
14(b)	9	1		

Question	Answer	Marks	Part Marks	Guidance
15	54	2	Award 1 mark for answer figs 54 or for $\frac{6 \times 18}{2}$ or equivalent calculation without decimals (ignoring signs) or for correct decimal multiplication or division (ignoring signs), e.g. • $[6 \times 1.8 =] 10.8$ • $[6 \div 0.2 =] 30$ • $[1.8 \div 0.2 =] 9$ • <i>their</i> $(6 \times 1.8) \div 0.2$ correctly evaluated • <i>their</i> $(6 \div 0.2) \times 1.8$ correctly evaluated.	This is a place value error, e.g. answer 5.4, 540 (must be positive for this mark). e.g $6 \times \frac{18}{10} \div \frac{1}{5}, \frac{108}{2}$ An answer of -54 implies 1 mark. For 1 mark, accept any of these, i.e. doing the calculation without the decimal and adjusting at the end, e.g. <i>[figs 6 × figs 18 =] 10.8</i> or <i>[figs 6 ÷ figs 2 =] 30</i> or <i>[figs 18 ÷ figs 2 =] 9</i> e.g. $108 \div -0.2 = -540$

Question	Answer	Marks	Part Marks	Guidance
16	A correct construction, e.g. Forms a 60° angle by connecting at least one end of the line segment to the intersection of the arcs and constructs the bisector of the 60° angle with construction arcs seen.  or constructing the perpendicular bisector of one of the sides of the equilateral triangle and producing 30, 60, 90 triangle. 	2	Award 1 mark for forming a 60° angle and first step for constructing the angle bisector (drawing an arc or pair of arcs, centre the vertex of the angle, that intersect both arms of the angle) or fully constructing the angle bisector of any angle or constructing the perpendicular bisector of any of the sides of the equilateral triangle (which can be just the given line as full equilateral triangle not required) or drawing a perpendicular line (without construction arcs) and using it to correctly construct a 30° angle with arcs or constructing equal arcs from either end of the given line and the given intersection point.	Accept any correct method. Must show arcs for 1 or 2 marks whichever method they use. Note they do not need to label which is the 30° angle. e.g. 1 mark for  e.g.  e.g. (note compass setting can be different from original arcs)  Ignore incorrect lines if correct arcs shown.

Question	Answer	Marks	Part Marks	Guidance
17(a)	1000 27	2	Award 1 mark for each correct value.	Do not accept, e.g. 10^3 , 3^3 , $\frac{27}{1}$
17(b)	-2	2	Award 1 mark for $\sqrt[3]{-64}$ or $-4^3 = -64$ or $2x = -4$ or for answer 2	For 1 mark, do not accept • -4 alone • $\sqrt{-64} = -4$
18	☒ ☐ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.
19	(x =) 7 (y =) -3	3	Award 2 marks for $x = 7$ or $y = -3$ or Award 1 mark for a correct method to eliminate one variable or for <i>their</i> two values satisfying one of the original equations.	Correct method, e.g. Multiplying one or both equations by a constant to get equal coefficients and consistent addition or subtraction that would eliminate a variable. Implied by, e.g. $7x = 49$ or $7y = -21$ or making x or y the subject and substituting into the other equation. Implied by $x + 3(2x - 17) = -2$ $2(-2 - 3y) - y = 17$

Question	Answer	Marks	Part Marks	Guidance
20	Smooth curve passing through the points $(-3, 11)$, $(-2, 6)$, $(-1, 3)$, $(0, 2)$, $(1, 3)$, $(2, 6)$ and $(3, 11)$.	3	Award 2 marks for at least five correct points plotted or If 2 marks not awarded, Award 1 mark for sight of correct y -coordinates for at least five points and Award 1 mark for plotting at least five of <i>their</i> points correctly.	$11, 6, 3, 2, 3, 6, 11$ Seen in table or implied by graph, e.g. a curve or lines passing through $(-1.5, 11)$, $(-1, 6)$, $(-0.5, 3)$, $(0, 2)$, $(0.5, 3)$, $(1, 6)$ and $(1.5, 11)$.
21	$80 \text{ (cm}^2\text{)}$	2	Award 1 mark for sight of 4^2 or 16 or one rectangle with sides a and b , where $a \times b = 5$ and a second rectangle with sides $4a$ and $4b$.	Implied by $5 \times 4 \times 4$ Could be drawn or implied by working.
22(a)	50 entered correctly into the stem-and-leaf diagram for Class B.	2	Award 1 mark for $56 - 14$ or 42 or $56 - (14 - 8)$ or 50	Do not accept 50 with any other values greater than 50 also added.
22(b)	☒ ☐ ☒ ☐	1		Both answers correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part Marks	Guidance
23	5 : 3	3	Award 2 marks for [length of rectangle B =] 17.5 or a ratio equivalent to 5 : 3 not in its simplest form or Award 1 mark for $\frac{56 \div 2}{5 + 2}$ oe or 1 share is 4 or $\frac{56}{5 + 2}$ oe or 1 share is 8 or 20 : 8 seen or 40 : 16 seen.	2 marks may be implied by 35 e.g. 17.5 : 10.5, 175 : 105, 35 : 21 etc. oe, e.g. $\frac{56}{14}$, $28 \div 7$, may be implied by 20 May be implied by 40
24	21	3	Award 2 marks for $a + 2(2a) = 35$ oe or finding $a = 7$ or Award 1 mark for 2nd term = $2a$ oe or 3rd term = $4a$ oe or a group of three numbers $k, 2k, 4k$ seen.	Do not accept $2a$ if it is clearly not the second term, e.g. $2a + something = 35$ is likely to identify $2a$ as the first term.
25	38 000	2	Award 1 mark for $p = 4$ and $q = -5$ or $p = 4$ or $q = -5$ and $0.038 \div 10^{p+2q}$ evaluated correctly for <i>their</i> p and q.	May be implied by $[0.038 \div] 10^{4+2 \times -5}$ or better, e.g. 10^{-6} $p = 4$ may be implied by $[0.45 \times] 10^4$ $q = -5$ may be implied by $[5070 \times] 10^{-5}$ or writing the correct value for p or q above the power of 10 in the question. Cannot leave as a division but do accept in correct standard form.

Question	Answer	Marks	Part Marks	Guidance
26	210(°)	3	Award 1 mark for $(7 - 2) \times 180$ oe seen or 900 seen and Award 1 mark for 6×115 seen or 690 seen.	oe, e.g. $(180 - \frac{360}{7}) \times 7$
27	2 or 8	1		



Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/02

Paper 2

October 2023

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.

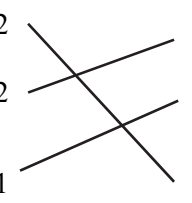
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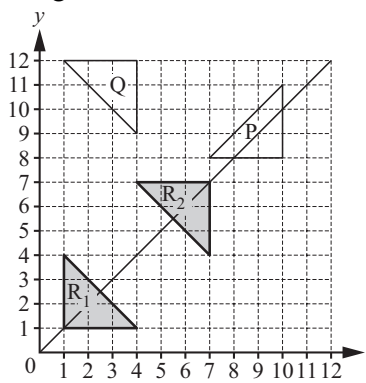
This document has **12** pages. Any blank pages are indicated.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part Marks	
1	360°	1		Accept any
2	tonne	1		Accept any
3	$(y =) 3 + x^2$ oe	1		
4	46 and 59	2	Award 1 mark for $35 + 11$ or 46 or <i>their</i> $46 + 13$ or 59 or sight of rule, i.e. square + 10 or $n^2 + 10$	The two terms $35 + 11$ may and 11 but not
5	☒ ☐ ☐ ☒	1		Both answers Accept any
6	$(4, -2)$	2	Award 1 mark for C marked on diagram at $(4, -2)$ or point B plotted at or seen as $(4, 3)$ or $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$ seen or <i>their</i> B correctly translated down 5 or answer $(4, k)$ or $(k, -2)$.	Must be either correctly FT
7	$3m + 5n = 86$	1		Accept any
8	(\$)4	2	Award 1 mark for $\frac{12}{2}$ oe or $\frac{150}{15}$ oe	Implied by 1 kg of straw Implied by 1 kg of rasp

Question	Answer	Marks	Part Marks	
9	15	1		
10	2 y w^5	3	Award 1 mark for each correct answer.	Accept y^1
11	68	1		Accept answ
12(a)	$x - > 2$ $2x > 2$ $\frac{x}{2} > 1$  $x > 1$ $x > 2$ $x > 3$	1		All three li Accept any
12(b)	$x \geq -\frac{9}{2}$	2	Award 1 mark for a correct first step or better, e.g. • $-2x \leq 20 - 11$ • $11 \leq 2x + 20$ • $\frac{11}{2} - x \leq \frac{20}{2}$	Do not isw, answer line Accept equi Accept othe $-\frac{9}{2}$ oe imp
13	☐ ☐ ☒ ☐ ☒ ☐	1		Both answe Accept any
14	$(a =) 32$ or $(a =) 36$	1		Accept $(a =$

Question	Answer	Marks	Part Marks	
15(a)	Rotation 90° anticlockwise (5, 7)	3	Award 1 mark for each of the three parts of the description. • rotation • 90° anticlockwise • (5, 7)	Accept equi 270(°) clock If more than for the ques Treat extra
15(b)	Any suitable position. • The triangle must have a vertical and a horizontal side, each 3 squares in length. • The vertex with the right angle will be on $y = x$ so that $y = x$ is a line of symmetry, e.g. 	1		

Question	Answer	Marks	Part Marks	
16	Correct calculation and answer showing that the circumference of the larger circle is approximately 44 (cm) more than the circumference of the smaller circle, e.g. $\pi \times 2 \times (11 + 7) - \pi \times 2 \times 11$ oe or $36\pi - 22\pi$ or $113.1 - 69.1$ and an answer in the range 43.85 to 44.1...	2	Award 1 mark for $\pi \times 2 \times (11 + 7)$ oe or better or $\pi \times 2 \times 11$ or better.	Accept valu Or better, e. or 113 to 1 Or better, e. or 69 to 69 Accept equi shown, e.g.

Question	Answer	Marks	Part Marks	
17	38.4 (years)	3	Award 2 marks for correct method to find estimated total, e.g. $25 \times 34 + 35 \times 18 + 45 \times 28 + 55 \times 20$ or Award 1 mark for three correct midpoints from 25, 35, 45 and 55 seen or finding estimated total using consistent points within ranges.	Answer 38 isw correct answer line Implied by Implied by e.g. using e Implied by 33.4 alone. Implied by 43.4 alone.
18	☒ ☐ ☒	1		Both answe Accept any

Question	Answer	Marks	Part Marks	
19(a)	32.1 to 32.143 (cm ²)	3	Award 2 marks for $\frac{\pi \times \left(\frac{6}{2}\right)^2}{2}$ oe or Award 1 mark for $\pi \times (6 \div 2)^2$ oe or $\frac{6 \times 6}{2}$ oe	An answer of 32.1 to 32.143 (cm²) earns 3 marks. Accept values of 32.1 to 32.143 (cm²) Implied by, $\pi \times (6 \div 2)^2$ oe Implied by, $\pi \times \left(\frac{6}{2}\right)^2$ oe Implied by, $\frac{6 \times 6}{2}$ oe
19(b)	8.5 (cm) or 8.48 to 8.49 (cm)	2	Award 1 mark for $6^2 + 6^2$ or better.	Accept final answer of 8.5 (cm) or 8.48 to 8.49 (cm) Or better, e.g. 8.475 to 8.495 (cm)

Question	Answer	Marks	Part Marks	
20	Correct demonstration, e.g. • $\frac{(95 - 65) + (55 - 40)}{95 + 55}$ or $\frac{30 + 15}{150}$ or $\frac{45}{150}$ oe and 0.3 or 30% or • $\frac{65 + 40}{95 + 55}$ or $\frac{65 + 40}{150}$ or $\frac{105}{150}$ oe and 0.7 or 70% and 0.3 or 30% or • 30% of 150 = 45 oe and 30 + 15 = 45	2	Award 1 mark for 95 – 65 or 30 [= adults did not like] or 55 – 40 or 15 [= children did not like] or 45 [= total who did not like] or 95 + 55 or 150 [= total surveyed] or 65 + 40 or 105 [= total who liked]	Accept $\frac{30}{100}$ not just 30 Values coul For percent e.g. $\frac{45}{150} \times$ Accept 30 a the addition
21(a)	17 500 (km)	1		Do not acco
21(b)	0.995 (kg)	1		

Question	Answer	Marks	Part Marks	
22	174 to 177 (cm ²)	3	Award 1 mark for $2 \times \pi \times r \times 18 = 845$ oe or better and Award 1 mark for $\pi \times (their\ r)^2$	Accept value Or better, e.g. Note 36π in and 18π imp Note do not This mark is surface area
23	$a = 9$ and $b = 11$	3	Award 2 marks for $x^2 - 5x + 5x - 25 \text{ and } x^2 - 3x + 12x - 36$ or $a = 9$ or $b = 11$ or Award 1 mark for three correct terms out of either of these set of four terms, $x^2 - 5x + 5x - 25$ or $x^2 - 3x + 12x - 36$ or for $-36 + b = -25$	For 1 or 2 marks accept $x^2 -$ and $x^2 -$ 9x implies t Alternative values of x scores 1 mark next mark.

Question	Answer	Marks	Part Marks	
24	0.28 oe	4	Award 1 mark for 0.4 seen and Award 1 mark for $0.18 \div 0.6$ or better and Award 1 mark for <i>their</i> $P(\text{Rajiv blue}) \times \textit{their} P(\text{Safia blue})$.	oe, e.g. $\frac{7}{25}$ Or better, e.g. or $[P(\text{Safia blue}) \times P(\text{Rajiv blue})]$ For 0.3 or 0.4 place on the tree from clear v This mark is for correct FT of on the tree c

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Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/01

Paper 1

April 2024

MARK SCHEME

Maximum Mark: 50

Published

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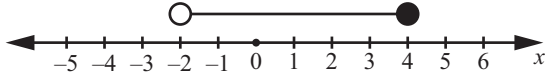
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This document has **10** pages.

Mark scheme annotations and abbreviations

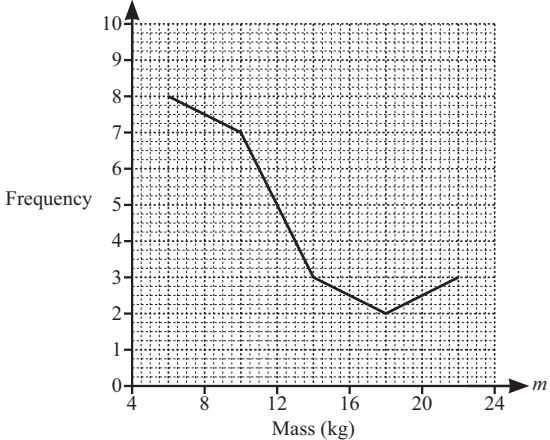
FT	follow through after error
SC	special case mark
cao	correct answer only
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	$(-5) \leq (n + 3) < (17)$	1		Both signs in the correct order for the mark.
2	$(w =) 3$	1		Do not accept $\frac{1}{200^3}$
3	$(x =) 10$ $(y =) 4$	2	Award 1 mark for $x = 10$ or $y = 4$ or for correct method to eliminate one variable or for <i>their</i> two values satisfying one of the original equations.	Correct method, e.g. multiplying one or both equations by a constant to get equal coefficients and correct consistent addition or subtraction or making x or y the subject and substituting into the other equation. Correct method implied by, e.g. $6x = 60$, $12y = 48$, $5(2 + 2y) + 2y = 58$, $\frac{2 - x}{-2} = \frac{58 - 5x}{2}$
4	$36(^{\circ})$	1		
5	$(11 \times 12 -) 12 (\times) 6 (=) 60$	1		All three numbers in the correct order for the mark.
6	☐ ☐ ☒ ☐	1		Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
7(a)	Correct Not correct ☒ ☐ ☒ ☐	1		Both answers correct for the mark. Accept any clear indication.
7(b)	(gradient =) -3 (y-intercept =) 7	2	Award 1 mark for each correct answer.	Do not accept $-3x$ or $-\frac{3}{1}$
8	Correct Not correct ☐ ☒ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.
9		1		

Question	Answer	Marks	Part marks	Guidance
10	$(x =) 130$	4	Award 2 marks for $(360 - 3 \times 70) \div 3$ or better. or Award 1 mark for $360 - 3 \times 70$ or better and Award 1 mark for $360 - (their\ 50 \times 2) [\div 2]$ or better provided $(their\ 50 \times 2) < 360$	May be implied by 50 50 may be seen on diagram in correct place. May be implied by 150 Or better, e.g. $360 - 210$ Or better, e.g. • $180 - their\ 50$ provided $their\ 50 < 180$ • if they mark 40° on the diagram for the acute angle in the rhombus then 280 or 140 may imply this mark. <i>Their</i> 50 can come from correct working with an arithmetic error or can be any angle marked on diagram in place of where 50 should be marked.

Question	Answer	Marks	Part marks	Guidance																																			
11(a)	Adding only these four values to the correct places in the diagram Outdoor plants <table><tr><td>(0)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>(1)</td><td>7</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>(2)</td><td>(3)</td><td>(7)</td><td>(7)</td><td></td><td></td><td></td></tr><tr><td>(3)</td><td>(4)</td><td>(5)</td><td>(8)</td><td>(9)</td><td>9</td><td>9</td></tr><tr><td>(4)</td><td>(1)</td><td>3</td><td></td><td></td><td></td><td></td></tr></table>	(0)							(1)	7						(2)	(3)	(7)	(7)				(3)	(4)	(5)	(8)	(9)	9	9	(4)	(1)	3					3	Award 1 mark for 17 correct in diagram as the minimum and Award 1 mark for <i>their</i> highest value in the diagram being 26 more than <i>their</i> lowest value, e.g. 17 as lowest and 43 as highest. If 0 scored from these 2 marks, award 1 mark for 43 or 17 + 26 oe in the working. and Award 1 mark for 39 and 39 correctly placed as mode. Maximum 2 marks if more than 4 numbers added to the outdoor plants.	e.g. 15 as lowest value and 41 as highest value. oe, e.g. 43 – 26 = 17 Ignore numbers added to the indoor plants.
(0)																																							
(1)	7																																						
(2)	(3)	(7)	(7)																																				
(3)	(4)	(5)	(8)	(9)	9	9																																	
(4)	(1)	3																																					
11(b)	23 (cm)	1																																					
12	11	2	Award 1 mark for 81 or 110 or for correctly evaluating $\frac{\textit{their} 110}{10}$	Note cannot be left as a fraction for this mark.																																			
13(a)	6.2×10^4	1																																					
13(b)	0.0081	1																																					
14	70 (cm ²)	1																																					

Question	Answer	Marks	Part marks	Guidance
15(a)	Straight lines joining the points (6, 8), (10, 7), (14, 3), (18, 2), (22, 3) 	3	Award 1 mark for four plots correct horizontally ($m = 6, 10, 14, 18, 22$) and Award 1 mark for four plots correct vertically (frequency = 8, 7, 3, 2, 3).	For 3 marks, ignore lines to the left of mass 6 and to the right of mass 22 for an otherwise correct diagram. Tolerance for points is ± 1 small square. Ignore bars when points also plotted, but e.g. bars alone scores 0
15(b)	$8 \leq m < 12$	1		Accept any clear indication.
16	0.778 cao	2	Award 1 mark for $0.\dot{7}$ oe seen.	Accept rounded or truncated to 2sf or better for 1 mark.
17(a)	(pattern 5) 24 (pattern 100) 9999	2	Award 1 mark for each correct answer.	
17(b)	$n^2 + 1$ oe	2	Award 1 mark for any quadratic expression.	oe, e.g. $(n^2 - 1) + 2$ scores 2 marks. e.g. $n \times n - 1$ scores 1 mark.

Question	Answer	Marks	Part marks	Guidance
18	Equivalent to 37×10^{-3} Not equivalent to 37×10^{-3} ☒ ☐ ☒ ☐ ☐ ☒ ☐ ☒ ☐	2	Award 1 mark for three correct ticks.	Accept any clear indication.
19	$A = (0, 44)$ $B = (80, 0)$	2	Award 1 mark for A or B coordinates correct or $M = (40, 22)$ or $A = (80, 0)$ and $B = (0, 44)$.	
20	2 or 3 or 4 or 5 or 6 or 7 and 6	2	Award 1 mark for one correct sentence.	
21	A point with negative integer x-coordinate and prime y-coordinate and satisfy the equation $y = 5 - 2x$, e.g. $(-1, 7)$ $(-3, 11)$, $(-4, 13)$, $(-6, 17)$.	2	Award 1 mark for any coordinates that satisfy $y = 5 - 2x$ and one of the other conditions, i.e. for a negative integer x-coordinate on $y = 5 - 2x$, e.g. $(-2, 9)$, $(-5, 15)$ or for a prime y-coordinate on $y = 5 - 2x$, e.g. $(0, 5)$, $(1, 3)$, $(1.5, 2)$.	

Question	Answer	Marks	Part marks	Guidance
22	$1\frac{1}{6}$ cao	4	Award 1 mark for $\frac{4}{3}$ oe or $\frac{24}{5}$ oe or $\frac{5}{24}$ oe seen and Award 1 mark for $\frac{4}{3} \times \frac{5}{24}$ or $\frac{20}{15} \div \frac{72}{15}$ oe with a common denominator, FT $\frac{\text{their } 4}{3}$ and $\frac{\text{their } 24}{5}$ provided one is correct and Award 1 mark for correct method to find fractions with a common denominator, e.g. $\frac{16}{18} + \text{their } \frac{5}{18}, \frac{32}{36} + \frac{10}{36}, \frac{64}{72} + \frac{20}{72}$ or If 2 or 3 marks not awarded, award 2 marks for answer $\frac{25}{54}$ oe	First 2 marks implied by $\frac{20}{72}$ oe, e.g. $\frac{10}{36}, \frac{5}{18}$ Note this is a method mark, if they show correct working for, e.g. $\frac{20}{15} \div \frac{72}{15}$ with an arithmetic error then award the mark. FT for either method for the second mark. <i>Their</i> $\frac{5}{18}$ must not have a denominator of 9 for this mark. Note this is a method mark, if they show correct working, e.g. $\frac{8 \times 72}{9 \times 72} + \frac{20 \times 9}{72 \times 9}$ with an arithmetic error then award the mark. These 3 marks implied by answers equivalent to $\frac{7}{6}$ e.g. $\frac{21}{18}, \frac{42}{36}, \frac{84}{72}$ $1\frac{3}{18}, 1\frac{6}{36}, 1\frac{12}{72}$ No need to check working if a value equivalent to $\frac{7}{6}$ is given. oe, e.g. $\frac{100}{216}$ isw incorrect cancelling or converting to decimal.

Question	Answer	Marks	Part marks	Guidance															
23(a)	3	1		Accept any clear indication.															
23(b)	800(%)	2	Award 1 mark for $9x^2$ oe FT from (a) or better.	1 mark implied by <table><tr><th>(a)</th><th>FT</th><th>Or better, e.g. answer</th></tr><tr><td>2</td><td>$4x^2$</td><td>300(%)</td></tr><tr><td>4</td><td>$16x^2$</td><td>1500(%)</td></tr><tr><td>200</td><td>$40\,000x^2$</td><td>3\,999\,900(%)</td></tr><tr><td>300</td><td>$90\,000x^2$</td><td>8\,999\,900(%)</td></tr></table>	(a)	FT	Or better, e.g. answer	2	$4x^2$	300(%)	4	$16x^2$	1500(%)	200	$40\,000x^2$	3\,999\,900(%)	300	$90\,000x^2$	8\,999\,900(%)
(a)	FT	Or better, e.g. answer																	
2	$4x^2$	300(%)																	
4	$16x^2$	1500(%)																	
200	$40\,000x^2$	3\,999\,900(%)																	
300	$90\,000x^2$	8\,999\,900(%)																	



Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/02

Paper 2

April 2024

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 **10** pages.

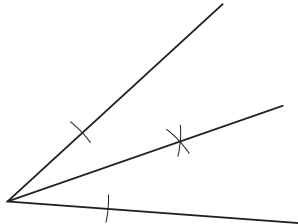
Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	14	1		
2	3	1		
3	5.29 (kg)	2	Award 1 mark for $4 \times \left(1 + \frac{15}{100}\right)^2$ oe or for 4.6	For 2 marks, accept answer 5.3 only if correct working shown or more accurate value shown. Accept work in grams, e.g. $4000 \times \left(1 + \frac{15}{100}\right)^2$, 4600 or 5290 for 1 mark.
4	30(%)	1		
5	D	1		Accept any clear indication.
6	400 5 –5	3	Award 1 mark for each correct answer.	5 and –5 can be in either order.
7	(a =) 3 or –3 (b =) 7	2	Award 1 mark for each correct answer.	
8	☒ ☐ ☐ ☐	1		Accept any clear indication.
9	(2, 2)	1		Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
10	46 cao	3	Award 2 marks for correct method $\frac{\pi \times 4.1^2 \times 7}{2^3} \text{ oe}$ or Award 1 mark for $\pi \times 4.1^2 \times 7 \text{ oe}$ or 2^3 oe or <i>their</i> more accurate answer shown then correctly truncated to the nearest whole number.	Accept values of π between 3.14 and $\frac{22}{7}$ May be implied by an answer in the range 46.1 to 46.3 May be implied by 369 to 370 or $\frac{11767}{100}\pi$ or 118π (or more accurate). Do not award 1 mark if there is any further working done to the volume of the cylinder other than their attempt to find the number of cubes, e.g. adding an area to the value from 369 to 370 Implied by, e.g. dividing a value by 8 or writing $v = 8$ but not just 8 alone.

Question	Answer	Marks	Part marks	Guidance
11	Not correct ticked and correct reasoning, e.g. 18 pizzas found. 54 and 36 found. - There are not 360 pizzas sold so you can't just subtract the angles. - A circle is 360(°) but only 324 pizzas are sold so $1^\circ \neq 1$ pizza. - Each degree is 0.9 oe pizzas not 1 pizza. - Each pizza is 1.1[...] oe degrees not 1 degree. 20 more pizzas should have been 22[.2...°].	2	Award 1 mark for a correct partial calculation $\frac{324}{360}$ oe or $\frac{360}{324}$ oe or better or recognition that the number of degrees is not the same as the number of pizzas without mentioning or using 360	18 must be the number of pizzas and not come from wrong working, such as $360 \div 20$ Or better, e.g. 0.9 1.1[...] $\frac{60}{360} \times 324$ oe or 54 [cheese] found. $\frac{40}{360} \times 324$ oe or 36 [meat] found. $\frac{60 - 40}{360} \times 324$ oe $\frac{20 \text{ more pizzas}}{324} \times 360$ For 2 marks, they must mention or use 360 in a calculation, implied by, e.g. 0.9, 1.1, 54, 36, 18 Implied by, e.g. - You can't just subtract the angles. 60 and 40 are angles not pizzas.
12	$\frac{y^2}{2}$ oe (cm ²)	1		Accept equivalent answers, e.g. $0.5y^2$, $\frac{1}{2}y^2$, $y \times y \div 2$
13	45(°)	2	Award 1 mark for $(7 - 2) \times 180$ oe or 900 seen.	

Question	Answer	Marks	Part marks	Guidance
14	$(y =) 6$	2	Award 1 mark for $56 = 8(y + 1)$ or better, e.g. $\frac{56}{2} = y + 1$, $56 = 8y + 8$, $7 = y + 1$	
15	(¥)5280	2	Award 1 mark for correct interpretation of exchange rate/gradient, e.g. • $[\\$]1 = [¥]132$ • $[\\$]5 = [¥]660$ • $\frac{3300}{25}$ oe • $40 \div \frac{25}{3300}$ oe	Do not accept $[\$]25 = [¥]3300$ alone as an interpretation of exchange rate. e.g. could also see (5, 660) as a coordinate on the graph for 1 mark.
16	Translation and $\begin{pmatrix} -1 \\ 8 \end{pmatrix}$	2	Award 1 mark for translation or $\begin{pmatrix} -1 \\ 8 \end{pmatrix}$	In place of $\begin{pmatrix} -1 \\ 8 \end{pmatrix}$ • accept 1 left and 8 up. • do not accept $\begin{pmatrix} -1 \\ 8 \end{pmatrix}$. If more than one transformation given, then 0 marks for the question.
17	Two correct intersecting arcs constructed 	1		Arcs can be any radius provided both consistent (± 2 mm) and should intersect on the bisector (approximately by eye, mark intention). Ignore excess arcs unless it is a complete re-start (which is acceptable).

Question	Answer	Marks	Part marks	Guidance								
18	Right-angled ticked and correct supporting work, e.g. $\frac{180}{5+8+3} \times 8 = 90$ oe (oe, e.g. $11.25 \times 8 = 90$) $90 \div 8 = 11.25$ (starting by assuming there is a right angle and it is the largest angle) and $180 \div 16 = 11.25$ oe 56.25, 90 and 33.75 seen $180(^{\circ})$ in triangle and 8 is half of 16 - As $5 + 3 = 8$ then both the 8 shares and the 5 + 3 shares must equal 90	2	Award 1 mark for $\frac{180}{5+8+3} [\times 8]$ oe or $90 \div 8$ or $\frac{8}{5+8+3} [\times 180]$ oe or recognition that 8 is half of 16 without mentioning or using $180(^{\circ})$.	Implied by 11.25 oe seen. Accept 16 for 5 + 8 + 3 throughout. e.g. ‘5 + 3 = 8 which is half’ without mention of both being 90 i.e. not using 180								
19	Correct complete table of values, i.e. <table border="1"><tr><td>x</td><td>(0)</td><td>(6)</td><td>12</td></tr><tr><td>y</td><td>20</td><td>10</td><td>(0)</td></tr></table> and Correct line from (0, 20) to (12, 0)	x	(0)	(6)	12	y	20	10	(0)	3	Award 2 marks for correct complete table or Award 1 mark for one correct value in table and Award 1 mark for correct line drawn or a correct FT from <i>their</i> table provided <i>their</i> three points make a straight line.	Mark intention, e.g. if the line is slightly short of (0, 20) or (12, 0), award the mark.
x	(0)	(6)	12									
y	20	10	(0)									
20	14cm ²	1		Accept any clear indication.								
21	72	1										

Question	Answer	Marks	Part marks	Guidance
22	$x \leq -2$	2	Award 1 mark for correct first step, e.g. $2x \leq 16 - 20$ oe or better or $x + \frac{20}{2} \leq \frac{16}{2}$ oe or better	Do not isw $x \leq -2$ becoming, e.g. -2 or $x = -2$ on the answer line, these answers score 1 mark only. e.g. $2x \leq -4$, $4 \leq -2x$ $x + 10 \leq 8$ Accept these with an incorrect inequality sign or equals sign for 1 mark.
23	$2x^2 + 6x - 15$	3	Award 1 mark for $x^2 + 4x$ and Award 1 mark for three terms correct out of $x^2, -3x, 5x$ and -15	Implied by $2x^2 + 6x$ in answer. $2x$ counts as two terms correct.

Question	Answer	Marks	Part marks	Guidance
24	$(c =) 10$	3	Award 1 mark for $\frac{9c}{5} + 32 = 2c + 30$ and Award 1 mark for correct first step to solve, e.g. • $\frac{9c}{5} = 2c + 30 - 32$ or better • $32 = 2c - \frac{9c}{5} + 30$ or better • $9c + 160 = 10c + 150$ or better If 0 scored, award 1 mark for a correct substitution of the same value of c for both equations. Alternate method if eliminating c first: Award 1 mark for $\frac{5(f - 32)}{9} = \frac{f - 30}{2}$ oe or better and Award 1 mark for correct substitution of <i>their</i> f into $c = \frac{f - 30}{2}$ or into $c = \frac{5(f - 32)}{9}$	Or better, e.g. $\frac{9c - 10c}{5} = 30 - 32$ e.g. $\frac{9 \times 0}{5} + 32$ and $2 \times 0 + 30$ with both values in bold being the same, does not need to be correctly evaluated when they show the substitution. This may be implied by correct evaluations if they make it clear what value of c they have used.

Question	Answer	Marks	Part marks	Guidance
25	0.4 (0.3) 0.6 0.4 0.7 0.6	3	Award 1 mark for either of the 0.4 values correct in tree diagram and Award 1 mark for any pair of branches adding to 1 If 0 scored, award 1 mark for any of these in the working: • $P(\text{green from first bag}) = 0.7$ oe • $P(\text{green from second bag}) = 1 - \text{their } 0.4$ correctly evaluated • $[P(\text{red from second bag}) =] 0.12 \div 0.3$	For the first two bullet points, they need to make it clear what they are working out so, e.g. not just 0.7 alone in the working.
26	(\$)1932	4	Award 2 marks for 15 or $16 + 20 + 16 + 8 + 9 + \sqrt{9^2 + (20 - 8)^2}$ or Award 1 mark for $9^2 + (20 - 8)^2$ or better and Award 1 mark for correct method for <i>their</i> perimeter $\times 23$	15 may be on diagram. 2 marks implied by 345 Implied by 84 Or better, e.g. $9^2 + 12^2$, 225, $\sqrt{9^2 + 12^2}$, $\sqrt{225}$ <i>Their</i> perimeter of the hexagon can have no more than one error (that is not arithmetic). This could be, e.g. • one side omitted or incorrect (FT from <i>their</i> 15 i.e. don't penalise them again for getting the 15 wrong) e.g. $(16 + 20 + 16 + 8 + 9 + k) \times 23$ oe (implied by 1587 when $k = 0$). • inclusion of one extra value (usually the 12 m length) along with the correct perimeter. (implied by 2208 if 12 m added) • implied by $460 + 368 + 368 + 184 + 207 + 345$ with one value incorrect (likely to be the 345).



Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/01

Paper 1

October 2024

MARK SCHEME

Maximum Mark: 50

Published

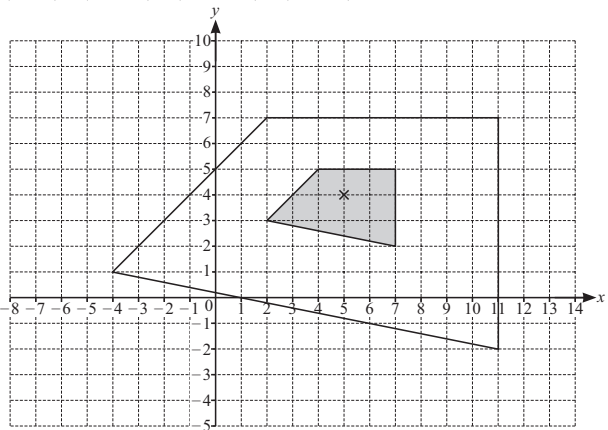
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which 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 **10** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfw	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	$7n^3$	1		Accept unsimplified, e.g. $(n^3) \times 7$
2	-3 and 2	2	Award 1 mark for each correct answer.	Answers must be in the correct order.
3	$60(^{\circ})$	2	Award 1 mark for 4×75 oe or 300	oe, e.g. repeated subtraction of 75 four times from any starting value (does not have to be from 360).
4	Quadrilateral drawn correctly at $(2, 7), (11, 7), (11, -2), (-4, 1)$ 	2	Award 1 mark for two or three vertices of the image correctly positioned or if the image has the correct size and shape but is wrongly positioned on the grid or for the correct centre of enlargement but wrong scale factor >1	Use template, mark intention. Must be on grid for this mark. Shape must fit on grid for 1 mark, i.e. with: SF 2 at $(3, 6), (9, 6), (9, 0), (-1, 2)$ SF 4 at $(1, 8), (13, 8), (13, -4), (-7, 0)$.
5	11	2	Award 1 mark for 2nd term = 4 or for $3^2 - 5 = 4$ oe seen or for $(\text{their previous term})^2 - 5$ correctly evaluated.	

Question	Answer	Marks	Part marks	Guidance
6	20 (km/h)	1		
7(a)	6	1		
7(b)	150 (cm ³)	1		
8	500 nm, 0.4 m, 70 cm	1		All three measurements in the correct order for the mark. Accept correctly converted units, e.g. 0.00005 cm, 40 cm (units must be present if they convert).
9	$\frac{1}{2} \times 22 \times \boxed{31} + \frac{1}{2} \times \pi \times \boxed{11}^2$	2	Award 1 mark for two correct values in the correct boxes.	For 11 accept $\frac{22}{2}$ or $22 \div 2$ i.e. consider the box acting like brackets. For $\frac{1}{2}$ accept equivalent fractions or 0.5

Question	Answer	Marks	Part marks	Guidance																																																																													
10(a)	<table><tr><th colspan="5">before</th><th></th><th colspan="5">after</th></tr><tr><td></td><td></td><td></td><td></td><td>9</td><td>4</td><td>(8)</td><td>(9)</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td>(2)</td><td>(1)</td><td>5</td><td>(1)</td><td>(5)</td><td>(8)</td><td>(8)</td><td>(8)</td></tr><tr><td></td><td>(5)</td><td>(5)</td><td>(5)</td><td>(4)</td><td>6</td><td>(2)</td><td>(4)</td><td>(7)</td><td>(7)</td><td>(8)</td></tr><tr><td>8</td><td>8</td><td>8</td><td>(8)</td><td>(3)</td><td>7</td><td>(5)</td><td>(6)</td><td>(7)</td><td>(8)</td><td></td></tr><tr><td></td><td>(9)</td><td>(7)</td><td>(6)</td><td>(5)</td><td>8</td><td>(2)</td><td>(5)</td><td></td><td></td><td></td></tr><tr><td></td><td>7</td><td>(5)</td><td>(4)</td><td>(3)</td><td>9</td><td>(1)</td><td>3</td><td></td><td></td><td></td></tr></table>	before						after									9	4	(8)	(9)							(2)	(1)	5	(1)	(5)	(8)	(8)	(8)		(5)	(5)	(5)	(4)	6	(2)	(4)	(7)	(7)	(8)	8	8	8	(8)	(3)	7	(5)	(6)	(7)	(8)			(9)	(7)	(6)	(5)	8	(2)	(5)					7	(5)	(4)	(3)	9	(1)	3				4	Award 1 mark for each of these correctly placed before: 9 as the lowest number in the 40s row - three 8s in the 70s row to make 78 the mode 7 as the highest number in the 90s row. after: 3 as the only extra value added in the correct place.	To a maximum of 2 out of 3 marks for an incorrect before side you can: - ignore other 9s in the 40 row - ignore other values in the table if the three 8s are correctly added provided 78 is still the mode, e.g. not another 5 in the 60s row - ignore another value less than or equal to 7 in the 90s row provided the numbers are correctly ordered.
before						after																																																																											
				9	4	(8)	(9)																																																																										
			(2)	(1)	5	(1)	(5)	(8)	(8)	(8)																																																																							
	(5)	(5)	(5)	(4)	6	(2)	(4)	(7)	(7)	(8)																																																																							
8	8	8	(8)	(3)	7	(5)	(6)	(7)	(8)																																																																								
	(9)	(7)	(6)	(5)	8	(2)	(5)																																																																										
	7	(5)	(4)	(3)	9	(1)	3																																																																										
10(b)	range	1		Accept any clear indication.																																																																													
11	12.65 (s) cao	1																																																																															
12	Not correct ticked and A correct explanation, e.g. - Rajiv has not followed the correct order of operations/BIDMAS/BODMAS - Rajiv multiplied 3 by 2 first - Rajiv should square first (then multiply by 2) - The correct answer is 18 - Rajiv has found $(2x)^2$.	1																																																																															

Question	Answer	Marks	Part marks	Guidance
13	True False True False ☒ ☐ ☐ ☒ True False True False ☒ ☐ ☐ ☒	2	Award 1 mark for three correct answers.	Accept any clear indication.
14	6	2	Award 1 mark for 32 [+ 10] or 42 seen.	Ignore cancelling of the 32 or 42, either can be in the numerator of a fraction. Do not accept if clearly spoilt, e.g. 32×2 , even done in stages, as this is p^6 .
15	$10 \leq l < 20$ $20 \leq l < 30$	1		Both intervals correct for the mark. Accept any exhaustive but unequal pair of intervals provided not overlapping, e.g. • $10 \leq l \leq 20$ and $20 < l < 30$ • $10 \leq l < 15$ and $15 \leq l < 30$

Question	Answer	Marks	Part marks	Guidance
16(a)	$\frac{9}{10}$ cao	2	Award 1 mark for equivalents to $\frac{9}{10}$ or for $[-]\frac{1}{10}$ oe	e.g. 0.9 , $\frac{63}{70}$ oe, e.g. $[-]\frac{7}{70}$, 0.1 1 mark can be awarded before any cancelling, converting or processing.
16(b)	$6\frac{3}{5}$ cao	3	Award 2 marks for equivalents to $6\frac{3}{5}$ or Award 1 mark for $\frac{8}{5}$ or $\frac{33}{8}$ If 0 or 1 scored, award 1 mark for correctly converting <i>their</i> improper fraction to a mixed number in its simplest form as their answer.	e.g. $\frac{33}{8}$, $\frac{264}{40}$, $6\frac{24}{40}$, 6.6 . 1 or 2 marks can be awarded before any cancelling, converting or processing.
17	$(x =)3$ and $(y =)5$	3	Award 2 marks for $(x =)3$ or $(y =)5$ or Award 1 mark for a correct method to eliminate one variable or for <i>their</i> two values satisfying one of the original equations.	Multiplying one or both equations by a constant to get equal coefficients and correct consistent addition or subtraction or making x or y the subject and substituting into the other equation.
18	Two angles where $0 < x < 80$ and $y = x + 100$	1		Both answers correct for the mark.

Question	Answer	Marks	Part marks	Guidance
19	Reflection and $x = -1$	2	Award 1 mark for reflection and Award 1 mark for $x = -1$ If 0 scored, award 1 mark for the correct rotation 90° clockwise of shape A about $(0, 0)$ seen.	Combinations of transformations score 0 marks (unless the diagram is correct or they are repeating the given transformation in the question). Treat extra properties as choice. Use template.
20		2	Award 1 mark for three or four from B, C, D, E and F correctly placed.	Accept calculations in place of letters. Look out for letters appearing in more than one region, mark the worst region if they do.

Question	Answer	Marks	Part marks	Guidance																								
21	<table><tr><td>True</td><td>False</td></tr><tr><td>☐</td><td>☒</td></tr><tr><td>☐</td><td>☒</td></tr></table>	True	False	☐	☒	☐	☒	1		Both answers correct for the mark. Accept any clear indication.																		
True	False																											
☐	☒																											
☐	☒																											
22(a)	50	1																										
22(b)	$\frac{2}{15}$ oe	2	Award 1 mark for $\frac{2}{5} \times \frac{1}{3}$ oe or a correct sample space diagram showing 15 outcomes with 2 indicated, e.g. by circling or $\frac{c}{15}$ where $c < 15$	For 2 marks, accept 0.13 or 13% or better (0.13). For 2 marks isw incorrect cancelling or conversion. You do not need to check every outcome when they list pairs to see if they are all correct but just make sure outcomes are not all incorrect (e.g. finding the sum of the two cards). Accept without outcomes, e.g. <table><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>2</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr></table> For $\frac{c}{15}$ where $c < 15$ ignore method or sample space diagram. This can be awarded before any cancelling or converting.		1	2	3	4	5	2						3						4				✓	✓
	1	2	3	4	5																							
2																												
3																												
4				✓	✓																							

Question	Answer	Marks	Part marks	Guidance
23	6.7	3	Award 1 mark for $n = 2$ and Award 1 mark for $p = -4$ If 0 or 1 scored, award 1 mark for $0.067 \div 10^k$ correctly evaluated, k must be a negative integer for this mark.	Accept $\frac{67}{10}$, $6\frac{7}{10}$ for 3 marks. May be written next to n or p in the question. 2 marks may be implied by: 10^{2-4}, $2 - 4$, $[0.067 \div] 10^{-2}$, 0.067×10^2, $67 \times 10^{-3} \div 10^{-2}$, $0.067 \div 100 \times 10$ 000 1 mark may be implied by, e.g. 10^{2+k} Value of k must be shown or a calculation for k shown to award this mark.
24	$(c =) -24$	3	Award 2 marks for both expansions correct, e.g. $x^2 + 3x + 3x + 9$ or better and $x^2 - 3x + 5x - 15[+4x]$ or better or Award 1 mark for three correct terms out of one of these expansions $x^2 + 3x + 3x + 9$ or $x^2 - 3x + 5x - 15$	Or better, e.g. $x^2 + 6x + 9$ (accept all terms negative if they rearrange to make c the subject) $x^2 + 2x - 15$ $x^2 + 6x - 15$ $6^2 + 9 + c = 2x - 15 + 4x$ $9 + c = -15$ 6x implies two terms correct. 2x implies two terms correct or 6x if 4x added.



Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/02

Paper 2

October 2024

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.

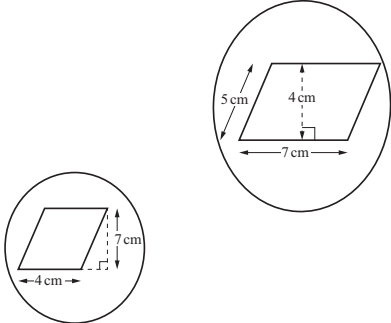
Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **10** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

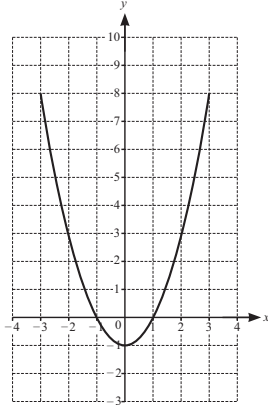
Question	Answer	Marks	Part marks	Guidance
1	125	1		Do not accept 5^3
2	5.8×10^{-2}	1		Accept any clear indication.
3	6	1		
4	135(°)	2	Award 1 mark for $180 - (360 \div 8)$ or $(8 - 2) \times 180[\div 8]$ oe	oe, e.g. 1080
5	4.1 oe	1		oe, e.g. $\frac{41}{10}$
6(a)	Any two different equations of the form $y = 5x + c$ where $c \neq 2$	1		Both equations correct for the mark. Accept lines not in the form $y = mx + c$, but not those equivalent to $y = 5x + 2$ c does not have to be an integer and can be 0
6(b)	-3	1		Accept (0, -3) or 0, -3 Do not accept $y = -3$
7	True ☒ False ☐ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
8	106 (cm ³) cao	3	Award 2 marks for 106.3 to 106.4... or $\frac{4232\pi}{125}$ (cm³) or Award 1 mark for $\pi \times 2.3^2 [\times 6.4]$ If 0 or 1 scored, award 1 mark for <i>their</i> more accurate answer shown then rounded correctly to 3sf.	Award 2 marks before any attempts at rounding and if trailing zeros included, e.g. 106.0 Accept values of π between 3.14 and $\frac{22}{7}$ 1 mark may be implied by 16.6... or $\frac{529\pi}{100}$ or 106.2[4]
9		1		Both answers correct for the mark. Accept any clear indication.
10	True ☒ ☐ False ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
11(a)	78 (kg)	3	Award 2 marks for correct method to find the total, e.g. $4 \times 50 + 6 \times 70 + 8 \times 90 + 2 \times 110$ or Award 1 mark for three correct midpoints from the four midpoints 50, 70, 90 and 110 or for correct method to find an estimated total using consistent points within range.	For 3 marks, isw answer $60 \leq m < 80$ following 78 found. Implied by 1560 or $200 + 420 + 720 + 220$ e.g. using end points of intervals, may be implied by $160 + 360 + 640 + 200$, 1360 or 68 $240 + 480 + 800 + 240$, 1760 or 88
11(b)	A correct reason, e.g. - The data is grouped. - We don't know exact values. - Midpoints are used.	1		Accept equivalent correct reasons.
12	$8x$ and $3y + 2$	2	Award 1 mark for one correct answer.	

Question	Answer	Marks	Part marks	Guidance										
13	$5 < x < 10$ And $n \leq 2$	3	Award 1 mark for $5 < x < 10$ and Award 2 marks for $n \leq 2$ or Award 1 mark for correct first step, e.g. $3n \leq 18 - 12$ or $n + 4 \leq 6$ or better.	2 embedded, answer 2 or $n = 2$ scores 1 mark only. For this 1 mark, accept any inequality sign or equals sign.										
14	<table><tr><td></td><td>Red</td><td>Yellow</td><td>Pink</td><td>Green</td></tr><tr><td>Prob</td><td>(0.25)</td><td>(0.1)</td><td>0.3</td><td>0.35</td></tr></table>		Red	Yellow	Pink	Green	Prob	(0.25)	(0.1)	0.3	0.35	2	Award 1 mark for $P(\text{Pink}) = 0.3$ or for $P(\text{Green}) = 0.35$ or for <i>their</i> $P(\text{Pink}) + \text{their } P(\text{Green}) = 0.65$	Accept equivalent fractions and percentages.
	Red	Yellow	Pink	Green										
Prob	(0.25)	(0.1)	0.3	0.35										
15	(\$)6859	2	Award 1 mark for $8000 \times \left(1 - \frac{5}{100}\right)^3$ oe or for 7220 seen.	For the 1 mark, ignore if they subtract <i>their</i> answer from 8000 implied by answer 1141 Note 5% is not sufficient for $\frac{5}{100}$ Common incorrect answer 6800 from decreasing by 15% scores 0										
16	<table><tr><td>Input</td><td>Output</td></tr><tr><td></td><td>1</td></tr><tr><td>7</td><td></td></tr><tr><td>9</td><td></td></tr></table>	Input	Output		1	7		9		3	Award 1 mark for each correct answer.	The 7 and -9 can be reversed.		
Input	Output													
	1													
7														
9														

Question	Answer	Marks	Part marks	Guidance
17	32	2	Award 1 mark for $\frac{8}{11+8+3} \times k$ oe where k is an integer ≥ 70 or for $70 \div (11+8+3) [\times 8]$ oe or [total =] 88 soi or for $11k$, $8k$ and $3k$ where k is any whole number $\neq 1$ If 0 scored, award SC 1 mark for answer 25, 26, 28 or 25.4 to 25.5 or an answer that is a multiple of 32	May be done in stages 11 + 8 + 3 implied by 22 May be implied by 3.1 to 3.2 or $\frac{35}{11}$ e.g. 22 : 16 : 6, 33 : 24 : 9, 44 : 32 : 12 Accept 14k used in place of 11k and 3k. Accept equivalents, e.g. $\frac{280}{11}$, $25\frac{5}{11}$
18	Correct position of town C drawn.	2	Award 1 mark for one correct bearing drawn.	Tolerance $\pm 2^\circ$ for each bearing, use template. One correct bearing drawn can be implied by point C being inside one set of tolerance lines on the template (if no bearing line, there must be a point marked, not just the label. If more than one point, mark the point labelled C, if no label then apply the choice rule).
19	$p = t^2 - 3$	1		Accept any clear indication.
20	(\$)2700	2	Award 1 mark for $[\frac{1}{3} \times] 135 \times k$ oe where $k = 10, 20, 30$ or 60 or better.	$\frac{1}{3} \times 135 \times k$ may be implied by $45 \times k$ 1 mark may be implied by 450, 900, 1350, 2700, 4050 $20 \times 135, 45 \times (10 + 20 + 30), [\frac{1}{3} \times] 8100$

Question	Answer	Marks	Part marks	Guidance																
21(a)	$R' = (6, 2)$	1																		
21(b)	$R' = (3, 7)$	1																		
22	6	1		Accept -6 or ± 6																
23	Correctly completed table of values, i.e. <table><tr><td>x</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>(8)</td><td>3</td><td>(0)</td><td>(-1)</td><td>(0)</td><td>3</td><td>8</td></tr></table> and A correct curve for the region $-3 \leq x \leq 3$ i.e. 	x	-3	-2	-1	0	1	2	3	y	(8)	3	(0)	(-1)	(0)	3	8	4	Award 2 marks for a correctly completed table of values or Award 1 mark for two correct values. and Award 2 marks for a correct curve or Award 1 mark for at least five points correctly plotted, FT <i>their</i> table.	Ignore curve outside of the region $-3 \leq x \leq 3$ for 1 or 2 marks. For this mark, curve can imply points. If more than 7 points plotted, firstly mark points on any curves/lines. In the absence of a curve, apply the choice rule.
x	-3	-2	-1	0	1	2	3													
y	(8)	3	(0)	(-1)	(0)	3	8													

Question	Answer	Marks	Part marks	Guidance
24	$(k =) 4$	2	Award 1 mark for $\frac{1}{2}kx(2x + 5)$ oe soi or $2x(2x + 5)$ or answer $k = 2$ or $k = 4x$	Accept expanded, e.g. $kx^2 + \frac{5kx}{2}$ Implied by, e.g. $[kx =] \frac{4x^2 + 10x}{2x + 5} \times 2$ $[kx =] \frac{8x^2 + 20x}{2x + 5}, [kx =] \frac{4x^2 + 10x}{x + 2.5}$ $k = 2x$ does not imply the factorising.

Question	Answer	Marks	Part marks	Guidance
25	51 (cents)	4	Award 3 marks for answer 5100 or Award 2 marks for correct method for perimeter, e.g. $4 \times \sqrt{\left(\frac{25.5}{2}\right)^2 + \left(\frac{34}{2}\right)^2}$ oe or better or Award 1 mark for $\left(\frac{25.5}{2}\right)^2 + \left(\frac{34}{2}\right)^2$ oe or better or $25.5^2 + 34^2$ oe or better and Award 1 mark for $\frac{k}{100} \times 60$ oe where k is any value they have previously written.	For all part marks, accept conversion to metres first. Or better, e.g. 85, 0.85 or $\frac{17}{20}$ oe, e.g. $2 \times \sqrt{25.5^2 + 34^2}$ For 1 mark, accept values below rounded or truncated to 3sf or better, e.g. $12.75^2 + 17^2$, $162.5625 + 289$ 451.5625, $\sqrt{12.75^2 + 17^2}$ $\sqrt{452}$, 21.25, $\frac{85}{4}$ e.g. $650.25 + 1156$, 1806.25, 42.5 May be done in stages. Do not accept being rounded up to an integer before multiplying by 60

Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/01**

Paper 1

April 2025

MARK SCHEME

Maximum Mark: 50

Published

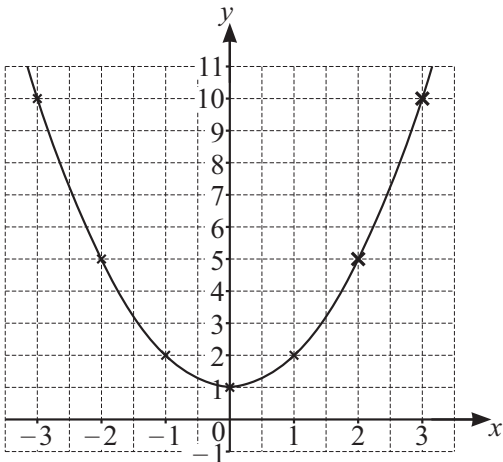
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which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

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

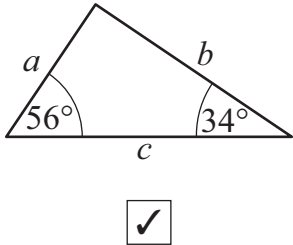
Question	Answer	Marks	Part marks	Guidance
1(a)	37	1		
1(b)	$n^2 + 1$	1		Accept unsimplified, e.g. $n \times n + 1$
2	Quantitative ☐ ☒ Qualitative ☒ ☐	1		Both answers correct for the mark. Accept any clear indication.
3	microlitre	1		Accept any clear indication.
4	$129 = 9t + 11c$	1		Accept any clear indication.
5	$(m =) \sqrt[3]{h}$	1		
6	Correct curve for $-3 \leq x \leq 3$ drawn 	2	Award 1 mark for 5 and 10 soi or for a correct curve between (-3, 10) and (1, 2).	For 2 marks, ignore work outside of the region $-3 \leq x \leq 3$ For 2 marks, do not accept straight line segments in the region $-2 \leq x \leq 2$ Implied by correct points plotted or curve/line through (2, 5) and (3, 10). 5 and 10 likely to be seen in table. For this mark, ignore work outside of region $-3 \leq x \leq 1$

Question	Answer			Marks	Part marks	Guidance
7	Congruent	Not congruent	Cannot tell	1		Both answers correct for the mark. Accept any clear indication.
	☒	☐	☐			
	☒	☐	☐			

Question	Answer	Marks	Part marks	Guidance
8	$\frac{4}{5}$ cao	3	Award 2 marks for any of these $\frac{12}{10} \div \frac{15}{10}$ oe common denominator $\frac{6}{5} \times \frac{2}{3}$ - an answer equivalent to $\frac{4}{5}$ or Award 1 mark for any of these $\frac{6}{5}$ and $\frac{3}{2}$ seen 1.2 and 1.5 seen $1\frac{1}{5} \div 1\frac{1}{2}$ oe or better $\left(1 + \frac{1}{5}\right) \times \frac{2}{3}$ <i>their</i> $\frac{6}{5} \times \frac{2}{3}$ or better oe $\frac{6}{5} \times$ the reciprocal of <i>their</i> $\frac{3}{2}$ oe.	Accept $12 \div 15$ for 2 marks but $1.2 \div 1.5$ is not far enough for 2 marks. e.g. 0.8, must be integer numerator and denominator for the fraction, e.g. $\frac{12}{15}$ Or better, e.g. $1\frac{1}{5} \div \frac{3}{2}$ oe, e.g. the correct evaluation of this. oe, e.g. the correct evaluation of this or dividing fractions with common denom. Do not accept if either the numerator or denominator of <i>their</i> $\frac{3}{2}$ is = 0 or if <i>their</i> numerator = <i>their</i> denominator.

Question	Answer	Marks	Part marks	Guidance																
9	8 and 9	1		Both answers correct for the mark. Do not accept $\sqrt{64}$ and $\sqrt{81}$																
10	A correct reason about sample size and a correct reason about age range. Sample size, e.g. • Her sample size is small • She has only chosen 5 students • She does not have enough data. Age range, e.g. • She chooses students who are the same age • She only chose 18-year-olds • 18-year-old students are likely to be taller (than the average for the school) • She hasn't picked other ages • She has only chosen older students • She hasn't picked a mix of classes • She has only chosen one class.	2	Award 1 mark for each correct reason.	2 marks may be awarded in one answer space. Do not accept two answer spaces saying the same point in different ways for 2 marks. Ignore non-contradictory statements. Do not accept unrelated suggestions as to what she should do instead/incorrect suggestions of non-randomness, e.g. • She should choose equal numbers of boys and girls • She should choose (5) students of different heights rather than random students.																
11	Three different correct pairs of values for a and b, e.g. <table><tr><th>a</th><th>b</th></tr><tr><td>4</td><td>2</td></tr><tr><td>2</td><td>4</td></tr><tr><td>16</td><td>1</td></tr><tr><td>−4</td><td>2</td></tr><tr><td>−2</td><td>4</td></tr><tr><td>$\frac{1}{16}$</td><td>−1</td></tr><tr><td>256</td><td>0.5</td></tr></table>	a	b	4	2	2	4	16	1	−4	2	−2	4	$\frac{1}{16}$	−1	256	0.5	3	Award 2 marks for two different correct pairs of values for a and b, ignoring errors, omissions or repeats or Award 1 mark for one correct pair of values for a and b, ignoring errors, omissions or repeats.	Accept any correct pairs of values for a and b .
a	b																			
4	2																			
2	4																			
16	1																			
−4	2																			
−2	4																			
$\frac{1}{16}$	−1																			
256	0.5																			

Question	Answer	Marks	Part marks	Guidance
12(a)	Correct Not correct ☐ ☒ ☒ ☐	1		Both answers correct for the mark. Accept any clear indication.
12(b)	20	1		Accept any clear indication.
13(a)	Correct triangle drawn at (4, -4), (6, -3), (8, -6)	2	Award 1 mark for correct reflection to triangle M (4, -1), (6, 0), (8, -3) or for correct translation by $\begin{pmatrix} 0 \\ -3 \end{pmatrix}$ of <i>their</i> triangle M.	Both triangles must be on the provided grid for this mark and at least one must be labelled for the FT. Do not award this for a translation of L.
13(b)	a reflection	1		Accept any clear indication.
14	78	2	Award 1 mark for angle 35 or 137 correctly marked on diagram or for correctly showing an angle alternate to 43 on the diagram or for correct calculation leading to the answer, e.g. $180 - 145 + 43$	e.g. $540 - 90 - 90 - 145 - (180 - 43)$, $360 - 145 - 137$
15	81	2	Award 1 mark for (numerator =) 15 or $11 - 8$ or better.	Or better, e.g. $\frac{15}{5}$, 3^4 but not just 3 alone.

Question	Answer	Marks	Part marks	Guidance
16	$(x =) 6$ $(y =) -5$	3	Award 2 marks for $x = 6$ or $y = -5$ or Award 1 mark for correct method to eliminate a variable or for <i>their</i> two values satisfying one of the original equations.	Correct method, e.g. Multiplying one or both equations by a constant to get equal coefficients and correct consistent addition or subtraction or making x or y the subject and substituting into the other equation. Implied by, e.g. $-7y = 35$, $7x = 42$ $2(21 + 3y) + y = 7$, $x - 3(7 - 2x) = 21$
17	61	2	Award 1 mark for 25	
18	A negative integer n and a positive integer p such that $n + p < 0$ e.g. $(n =) -3$, $(p =) 2$ $(n =) -5$, $(p =) 1$	1		Do not accept, e.g. $n = (-3)^2$, $p = 2^2$
19		1		Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
20	Finding the number of pencils is 46 with supporting working	3	Award 2 marks for $11 + 3 = 7x - 5x$ or better or Award 1 mark for $5x + 11 = 7x - 3$ oe and Award 1 mark for $5 \times \text{their } 7 + 11$ or $7 \times \text{their } 7 - 3$	Minimum working is 46 found and either $x = 7$ or $5 \times 7 + 11$ or $7 \times 7 - 3$ Or better, e.g. $14 = 2x$, $x = 7$ Accept with all signs reversed. Award 2 marks for answer 46 with no/insufficient supporting working.
21(a)	independent	1		Accept any clear indication.
21(b)	40	1		Accept '40 out of 140' but not $\frac{40}{140}$

Question	Answer	Marks	Part marks	Guidance																																																																
21(c)	$\frac{16}{49}$ oe	2	Award 1 mark for $\frac{4}{7} \times \frac{4}{7}$ or for answer $\frac{16}{k}$ or $\frac{c}{49}$ where $k > 16, c < 49$ or for a fully correct sample space diagram.	Accept equivalent fractions, decimals and percentages correct to at least 2dp, 0.3265.. Note: confusing odd and even gives answer $\frac{9}{49}$ which scores 1 mark for $\frac{c}{49}$ Award mark before any cancelling. Sample space diagram, e.g. <table><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>1</td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td><td></td><td>✓</td></tr></table>		1	2	3	4	5	6	7	1	✓		✓		✓		✓	2								3	✓		✓		✓		✓	4								5	✓		✓		✓		✓	6								7	✓		✓		✓		✓
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22	Any fraction with an odd denominator that is not equivalent to a recurring decimal, e.g. $\frac{1}{5}$	1		Accept, e.g. $\frac{6}{3}, \frac{20}{1}, \frac{5}{5}$ isw here and mark original fraction and ignore any evaluation (correct or incorrect)																																																																
23	(x =) 11 (y =) 8	2	Award 1 mark for each correct answer.	Award 1 mark only for (x =) 19 ¹¹ and (y =) 7 ⁸																																																																
24	6	1		Accept –6 Do not accept $\sqrt{36}$																																																																

Question	Answer	Marks	Part marks	Guidance
25	$2w + 3$	2	Award 1 mark for any of these $\frac{3t(2w+3)}{3t}$ or better $\frac{2tw+3t}{t}$ or better $\frac{6w+9}{3}$ or better $2w$ or 3 correct in a two-term expression as the answer.	Or better, e.g. $\frac{2w+3}{1}$ Do not accept $3t\left(\frac{2w+3}{1}\right)$ alone as better. Allow these as separate fractions. e.g. $2w + 9t$, $6tw + 3$

Question	Answer	Marks	Part marks	Guidance
26	(x =) 0.7 (y =) 0.55	3	Award 2 marks for answer 0.7 or 0.55 or Award 1 mark for any of these $\frac{0.084}{0.12}$ oe $\frac{0.084 - 0.12 \times 0.15}{0.12}$ oe or 0.018 seen.	Ignore inclusion of unit m with answers. May be implied by $\frac{8.4}{12}$, $\frac{4.2}{6}$ May be implied by $\frac{0.084 - 0.018}{0.12}$, $\frac{0.066}{0.12}$, $\frac{0.084}{0.12} - 0.15$ For 1 mark, for the first two bullet points accept equivalent calculations in cm² and cm, e.g. may be implied by $\frac{840}{12}$, 70 cm, 55 cm.

Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/02**

Paper 2

April 2025

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.

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This document has **10** pages. Any blank pages are indicated.

Mark scheme annotations and abbreviations

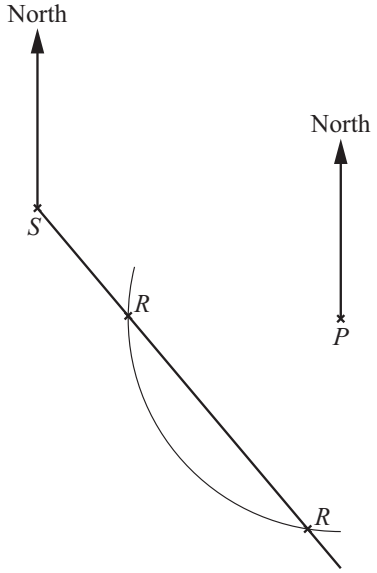
FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfw	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance												
1	32 (mins)	1														
2	14	1		Ignore decimals in working if 14 chosen as answer. Accept ± 14												
3	$(n + 7)^2$	1		Accept equivalents, e.g. $(n + 7)(n + 7)$, $n^2 + 14n + 49$ Do not isw incorrect expansion. Do not accept an equation, e.g. $x = (n + 7)^2$, $n = (n + 7)^2$												
4	2	1		Accept any clear indication.												
5	343 (cm ³) or 343.0 to 343.4... (cm ³)	2	Award 1 mark for $\pi \times 4.1^2$ [$\times 6.5$] oe.	Accept values of π between 3.14 and $\frac{22}{7}$ 1 mark implied by 52.7 to 52.8...												
6	66 and 3	2	Award 1 mark for each correct answer.													
7	<table><tr><td></td><td>Meat</td><td>Vegetarian</td></tr><tr><td>Children under 10</td><td>(2)</td><td>(3)</td></tr><tr><td>Children 10 to 17</td><td>7</td><td>3</td></tr><tr><td>Adults</td><td>3</td><td>5</td></tr></table>		Meat	Vegetarian	Children under 10	(2)	(3)	Children 10 to 17	7	3	Adults	3	5	2	Award 1 mark for two correct values.	
	Meat	Vegetarian														
Children under 10	(2)	(3)														
Children 10 to 17	7	3														
Adults	3	5														
8	7.2 (yuan per dollar)	1														
9	(0, 4)	1														

Question	Answer	Marks	Part marks	Guidance																				
10(a)	A correct, ordered diagram <table border="1"> <tr> <td colspan="4">(Question 1)</td> <td></td> </tr> <tr> <td></td><td></td><td></td><td>4</td><td>(3)</td> </tr> <tr> <td>7</td><td>6</td><td>1</td><td>1</td><td>(4)</td> </tr> <tr> <td></td><td></td><td>1</td><td>0</td><td>(5)</td> </tr> </table>	(Question 1)								4	(3)	7	6	1	1	(4)			1	0	(5)	2	Award 1 mark for all rows correct but unordered or for correctly ordered but with one error or omission.	For 1 or 2 marks ignore numbers added to the right-hand side of the stem-and-leaf diagram. One error could be, e.g. one leaf in the wrong row.
(Question 1)																								
			4	(3)																				
7	6	1	1	(4)																				
		1	0	(5)																				
10(b)	(Median) 43 (Mode) 36	2	Award 1 mark for each correct answer.																					
10(c)	range and lower	1		Both words in the correct order for the mark.																				
11	144(°)	2	Award 1 mark for $(10 - 2) \times 180 [\div 10]$ or better or $180 - \frac{360}{10}$ oe.	Or better, e.g. 1440																				
12(a)	375 ($\leq n < 385$)	1																						
12(b)	3.625 (kg)	1		Do not accept with an inequality sign, e.g. < 3.625																				
13	900	2	Award 1 mark for $750 \div (11 - 6) \times k$ or better where $k = 1, 6, 11$ or 17	Or better, e.g. $750 \div 5$ Implied by 150, 1650 or 2550																				

Question	Answer	Marks	Part marks	Guidance										
14	Could be correct ☒ ☐ Not correct ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.										
15	(x =) 1.04	1		Accept equivalent fractions, e.g. $\frac{104}{100}$, $\frac{26}{25}$ Do not accept 1.04^5 or 104%.										
16	<table><tr><th>True</th><th>False</th></tr><tr><td>☒</td><td>☐</td></tr><tr><td>☒</td><td>☐</td></tr><tr><td>☐</td><td>☒</td></tr><tr><td>☒</td><td>☐</td></tr></table>	True	False	☒	☐	☒	☐	☐	☒	☒	☐	2	Award 1 mark for three correct answers.	Accept any clear indication.
True	False													
☒	☐													
☒	☐													
☐	☒													
☒	☐													
17	0.59 oe	3	Award 1 mark for $P(E) = 0.07 \times 2$ oe and Award 1 mark for $1 - (0.06 + \textit{their } P(E) + 0.07 + 0.1 + 0.04)$ oe or $0.73 - \textit{their } P(E)$ correctly evaluated for <i>their</i> $P(E)$ provided <i>their</i> $P(E) < 0.73$	Accept any equivalent fraction or 59%. If answer and table contradict, mark answer line. Implied by $P(E) = 0.14$ oe or sight of 0.41 oe. oe, e.g. $1 - 0.41$, $1 - (0.27 + \textit{their } P(E))$.										

Question	Answer	Marks	Part marks	Guidance									
18	$x > 6.4$ oe	2	Award 1 mark for correctly isolating terms in x on one side and constants on the other side, e.g. $11x - 6x > 32$ or better.	Accept equivalent fractions, e.g. $x > \frac{32}{5}, x > 6\frac{2}{5}$ for 2 marks. Accept $-32 > 6x - 11x$ or better. Or better, e.g. $5x > 32, -32 > -5x$ For 1 mark, accept any inequality sign or equals sign. Do not isw. Answer $x = 6.4$ or 6.4 scores 1 mark only.									
19	<table><tr><td></td><td>Positive y-coordinate</td><td>Negative y-coordinate</td></tr><tr><td>Positive x-coordinate</td><td>(B')</td><td>C'</td></tr><tr><td>Negative x-coordinate</td><td>A'</td><td>D'</td></tr></table>		Positive y-coordinate	Negative y-coordinate	Positive x-coordinate	(B')	C'	Negative x-coordinate	A'	D'	2	Award 1 mark for two correct answers or for A'B'C'D' drawn correctly on the grid.	Ignore diagram if table correct. Accept only the points (-3, 1), (3, 1), (1, -1), (-1, -5) drawn on the grid. Mark intention.
	Positive y-coordinate	Negative y-coordinate											
Positive x-coordinate	(B')	C'											
Negative x-coordinate	A'	D'											

Question	Answer	Marks	Part marks	Guidance
20	Both positions of R correctly marked, e.g. 	3	Award 2 marks for one correct point for R or If 2 marks not awarded: Award 1 mark for the correct bearing of 135° from S drawn and Award 1 mark for 3.5 (cm) soi.	Ignore line joining S to P. Tolerance $\pm 2^\circ$ and ± 2 mm. Ignore any incorrect points for these 2 marks. Tolerance $\pm 2^\circ$. If the value 3.5 is not written then: 3.5 is implied by a correct arc from P. If arc not seen 3.5 can be implied by all <i>their</i> points for R being 3.5 cm from P. Tolerance ± 2 mm for the drawing but not the written value. If no intersecting bearing and arc to indicate the position of R clearly there must be a point marked, not just the label.
21	$x^2 + 6x + 9$	2	Award 1 mark for three correct terms out of x^2 , $3x$, $3x$, 9	Note: $6x$ counts as two correct terms.

Question	Answer	Marks	Part marks	Guidance
22	1734 (cm ²)	2	Award 1 mark for $16^2 + 30^2$ or better or for <i>their</i> 34×51 where <i>their</i> 34 comes from an attempt at Pythagoras.	Or better, e.g. $256 + 900$, 1156, $\sqrt{16^2 + 30^2}$, 34 e.g. $\sqrt{30^2 - 16^2} \times 51$
23	(x =) 2.1 oe	3	Award 2 marks for a correct equation which does not have x in a denominator and which has no brackets, e.g. $27 = 20x - 15$ or $\frac{27}{5} = 4x - 3$ or better or Award 1 mark for $27 = 5(4x - 3)$	Accept equivalent fractions for 3 marks, e.g. $\frac{42}{20}$, $\frac{21}{10}$, $2\frac{1}{10}$ but not, e.g. $\frac{8.4}{4}$ as the fraction cannot contain decimals for 3 marks. Or better, e.g. $42 = 20x$, $5.4 = 4x - 3$ Award 2 marks for an embedded answer.
24	(t =) 2y	2	Award 1 mark for $t - y = \frac{t+y}{3}$ oe or better or for answer (t =) $-2y$	Do not accept $t = \frac{4y}{2}$ Or better, e.g. $3(t - y) = t + y$, $3t - 3y = t + y$, $2t = 4y$

Question	Answer	Marks	Part marks	Guidance
25	83.4 (cm) cao	4	Award 3 marks for any of these answers • 83 • 83.3 to 83.43 • 75.4 • $24\pi + 8$ or Award 2 marks for $\frac{\pi \times 20}{2} + \frac{\pi \times (20+8)}{2} [+8] \text{ oe or better}$ or Award 1 mark for any of these • $\frac{\pi \times 20}{2}$ oe or better • $\frac{\pi \times (20+8)}{2}$ oe or better or Award 1 mark for rounding <i>their</i> more accurate answer shown correct to 1 decimal place.	Accept values of π between 3.14 and $\frac{22}{7}$ Or better, e.g. $10\pi + 14\pi$, (31.4 to 31.43) + (43.9 to 44) 24π, 75 or 75.3 to 75.43 If 8 added to one of the arcs first then $\frac{\pi \times 20}{2} + 8$ implied by 39.4 to 39.43 $\frac{\pi \times (20+8)}{2} + 8$ implied by 51.9 to 52 Or better, e.g. 10π, 31.4 to 31.43 Or better, e.g. 14π, 43.9 to 44

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Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/01**

Paper 1

October 2025

MARK SCHEME

Maximum Mark: 50

Published

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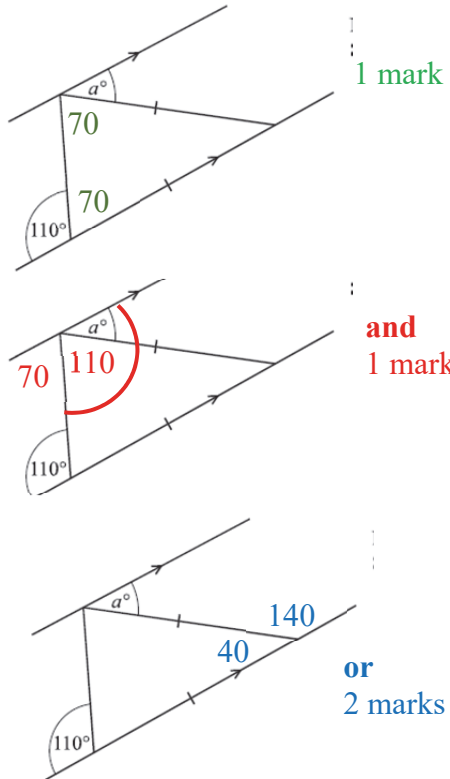
This document has **12** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	35 800	1		
2	$(-4)^2$ and -4×-2	1		Both answers correct for the mark. Accept any clear indication.
3	vertically opposite	1		Accept reasonable misspellings. Do not accept opposing.
4	An example of relevant quantitative data, e.g. - Amount of money (spent) (Student's) age - The number of students (in each age group).	1		Accept correct equivalents, e.g. - Pricing of food - Scale of 1 to 10 to show how often they buy different foods - The number of lunch orders - How much do you spend? (i.e. presented as a question) - Put the ages in a bar chart (ignore references of what to do with the data, similarly with calculations) - Money (they bring to school). Do not accept qualitative data (also) offered, e.g. Students from different ages - The most popular food - A bar chart of people.
5	84 ($\div 12 =$) 7	2	Award 1 mark for 84 or 7	Correct order only.

Question	Answer	Marks	Part marks	Guidance
6	Correct construction with correct intersecting arcs drawn.	2	Award 1 mark for accurate triangle with no/incorrect arcs or for any equilateral triangle with correct arcs but incorrect size/position or for correct pair of arcs (65 mm) with no/incomplete/unruled triangle.	Accept $\pm 2^\circ$ tolerance. ± 2 mm tolerance. Arcs must be sufficient to complete triangle.
7	$C = 50n + 80$	1		Accept any clear indication.
8	Correct ruled graph of $4x + 5y = 40$ from (0, 8) to (10, 0).	3	Award 2 marks for two correct plots or Award 1 mark for one correct value soi.	Evidence of plotting (4, 5) is max 2 marks. Implied by ends of line drawn. Plots can be other points on the line, e.g. (5, 4). Plots must be indicated if not ends of line. Implied by one correct plot. May be seen in table.

Question	Answer	Marks	Part marks	Guidance
9	$(a =) 40$	3	Award 1 mark for - either of the base angles of the triangle = 70 and Award 1 mark for either of these - alternate angle to 110 = 110 - co-interior angle to 110 = 70 or Award 2 marks for either of these - angle at apex of triangle = 40 - co-interior angle to $a = 140$ or for a full correct method, e.g. $180 - ((180 - 110) \times 2)$ oe $110 - (180 - 110)$ oe.	For part marks: - angles must be marked in the correct place on the diagram or indicated by clear labelling of the diagram - do not apply the choice rule, e.g. one base angle = 70 and the other base angle $\neq 70$ scores 1  1 mark and 1 mark or 2 marks

Question	Answer	Marks	Part marks	Guidance
10	88×1.13	1		Accept any clear indication.
11	Equilateral triangle	1		Accept regular triangle, triangular (base) and reasonable misspellings. Do not accept, e.g. • triangular prism • isosceles triangle.
12(a)	x^9	1		
12(b)	18 and 7	2	Award 1 mark for 18 or 7	Correct order only.
13	= < <	2	Award 1 mark for two correct answers.	
14	16 (seconds)	2	Award 1 mark for 4×20 or for $\frac{4}{5} = \frac{k}{20}$	Or better, e.g. $80, \frac{4}{5} \times 20, 80 \div 5, 20 \div \frac{5}{4}$ Accept a correct full method that involves changing units consistently, e.g. $\frac{4}{3600} \times 20 \times \frac{3600}{5}, \frac{4 \times 10^3}{3600} \times 20 \times \frac{3600}{5 \times 10^3}$ $(4 \div 3.6) \times 20 \div (5 \div 3.6)$

Question	Answer	Marks	Part marks	Guidance
15	-2	2	Award 1 mark for $(-3 + 2)^2 = 1$ oe or better.	Or better, e.g. Award 1 mark for these: 5×1 $5 \times 1 - 7$ Oe, e.g. if brackets expanded first must get to a comparable point such as $(-3)^2 + 2(-3) + 2(-3) + 4 = 1$ or better, e.g. $5(-3)^2 + 20(-3) + 20 = 5$

Question	Answer			Marks	Part marks	Guidance										
16	True ✓	False ✓	Cannot tell ✓	2	Award 1 mark for two correct answers.	Accept any clear indication.										
17	(x =) 2 (y =) 7			3	Award 1 mark for (x =) 2 and Award 2 marks for (y =) 7 or Award 1 mark for correct first step, e.g. $8 = 2(y - 3)$ or $\frac{8}{2} = y - 3$	Oe, e.g. $8 = 2y - 6$, $2y = 14$ Award 1 mark for $\frac{8}{7-3} = 2$ (correct solution of 7 shown embedded).										
18	<table><tr><th>True</th><th>False</th></tr><tr><td></td><td>✓</td></tr><tr><td>✓</td><td></td></tr><tr><td></td><td>✓</td></tr><tr><td></td><td>✓</td></tr></table>			True	False		✓	✓			✓		✓	2	Award 1 mark for three correct answers.	Accept any clear indication.
True	False															
	✓															
✓																
	✓															
	✓															

Question	Answer	Marks	Part marks	Guidance
19(a)	Correct frequency polygon with lines joining the points (20.5, 5), (21.5, 12), (22.5, 17), (23.5, 22) and (24.5, 2).	3	Award 2 marks for a horizontal translation of the correct polygon or Award 1 mark for four or five plots correct horizontally (time = 20.5, 21.5, 22.5, 23.5, 24.5) and Award 1 mark for four or five plots correct vertically (frequency = 5, 12, 17, 22, 2).	Ignore lines to the left of time 20.5 and to the right of time 24.5 Ignore lines to the left of <i>their</i> 20.5 and to the right of <i>their</i> 24.5 Plots may be implied by ends of diagonal lines, otherwise should be a dot or cross. Ignore any bars drawn for full marks or part marks (bars alone or horizontal/vertical lines do not imply plots).
19(b)	4 and 3.1	2	Award 1 mark for two correct and one incorrect or for one correct and none incorrect.	Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
20(a)	Correct demonstration, e.g. 10th term is -0.5 $9 \times 2.5 > 22$ oe $10 \times 2.5 > 24.5$ oe	2	Award 1 mark for $[9 \times 2.5 =] 22.5$ oe or $22 - 9 \times 2.5$ oe or 19.5, 17, 14.5, 12. 9.5, 7, 4.5, 2 seen or 9 subtractions of 2.5 from 22 soi to a negative number FT one error or $22 - 10 \times 2.5 = -3$ oe or $24.5 - 2.5n$ oe.	For 2 marks, accept repeated subtraction to -0.5 . Subtractions implied by correct terms. Oe, e.g. $\frac{45}{2}$. Accept $-22.5, -\frac{45}{2}$ Oe, e.g. $22 - 22.5, 22 - \frac{45}{2}, \frac{44 - 45}{2}, 22 + 2.5 - 10 \times 2.5, 24.5 - 10 \times 2.5$ Allow equivalent fractions, e.g. $\frac{39}{2}, \frac{34}{2}, \frac{29}{2}, \frac{24}{2}, \frac{19}{2}, \frac{14}{2}, \frac{9}{2}, \frac{4}{2}$ seen. Oe, e.g. $22 - 25 = -3$
20(b)	-8 and -23 and -88	2	Award 1 mark for three correct and one incorrect or for two correct and no incorrect.	Accept any clear indication.
21	102.292 and 42 800	2	Award 1 mark for each correct answer.	Correct order only.

Question	Answer	Marks	Part marks	Guidance
22	2280	3	Award 2 marks for any of these • $\left[2\frac{7}{25} = \right] 2.28$ or $\frac{228}{100}$ • $\frac{57}{25} \times 1000$ or better • $2 \times 1000 + \frac{7}{25} \times 1000$ or better or Award 1 mark for $\left(9.5 + \frac{1}{2}\right)^3 = 1000$ or $\frac{57}{25}$ oe improper fraction.	Or better, e.g. $\frac{57\,000}{25}$ but not back a step, e.g. $\frac{57}{25} \times 10^3$ scores 1 mark only. Implied by, e.g. $10^3 = 1000$

Question	Answer	Marks	Part marks	Guidance
23	(3, 2)	3	Award 2 marks for x- or y-coordinate correct or Award 1 mark for $(21 - -9) \div 5 \times k$ oe or $(11 - -4) \div 5 \times k$ oe where k is 1, 2 or 3 in either method or for sight of 30 and 12 : 18 or for sight of 15 and 6 : 9	Accept 2 + 3 for 5 and accept equivalents provided they show $(21 - -9)$ or $(-9 - 21)$ or $[-]30$ $(11 - -4)$ or $(-4 - 11)$ or $[-]15$ i.e. oe is not just for 6 or 3 alone or these alone: 6×2, 6×3, 3×2, 3×3, 12, 18, 6 or 9

Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/02**

Paper 2

October 2025

MARK SCHEME

Maximum Mark: 50

Published

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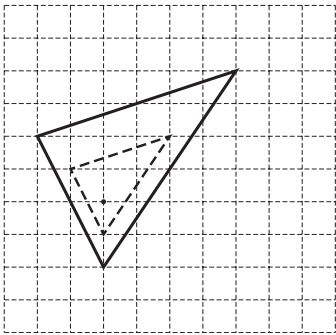
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SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
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soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1(a)	2π	1		Accept any clear indication.
1(b)	8	1		Accept ± 8 or -8
2	3×10^4	1		
3	☒ ☐ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.
4	True False ☒ ☐ ☐ ☒	1		Both answers correct for the mark. Accept any clear indication.
5	-4	1		
6	$(14 + \sqrt{36}) \div 2 = 10$	1		More than one pair of brackets scores 0
7	$x = -3$	1		
8	$(n + 3)^2$ oe	1		Oe, e.g. $n^2 + 6n + 9$ Do not accept equations, e.g. $n = (n + 3)^2$, $x = (n + 3)^2$
9	14 36	2	Award 1 mark for 14 or 36	Correct order only.
10	17 or 18 or 19 or 20	1		

Question	Answer	Marks	Part marks	Guidance
11(a)	6	1		
11(b)	n^3 oe	1		Accept unsimplified, e.g. $n \times n \times n$.
12	[Boat] × positioned on a bearing of 110° and a distance of 8.5 cm from L .	2	Award 1 mark for bearing of 110° drawn or for × being a distance of 8.5 cm from L .	Tolerance for all marks is $\pm 2^\circ$ and ± 2 mm. Do not accept the end of a line alone to represent the position of the boat.
13(a)	72°	1		
13(b)	36	2	Award 1 mark for $(180 - 170) \times n = 360$ oe or $\frac{180(n-2)}{n} = 170$ oe.	Oe, e.g. $\frac{360}{180-170}$ Oe, e.g. $180n - 360 = 170n$
14(a)	0.17	1		Accept equivalent fractions or percentage.
14(b)	228	2	Award 1 mark for $0.2 + 0.18$ oe or for 120 or 108	Implied by 0.38, $\frac{19}{50}$, 38% Award 1 mark for answer $\frac{228}{600}$

Question	Answer		Marks	Part marks	Guidance
15	Regular	Not regular	1		All three ticks correct for the mark. Accept any clear indication.
		✓			
	✓				
		✓			
16	3.15 (≤L<) 3.25		2	Award 1 mark for one correct or for both correct but reversed.	

Question	Answer	Marks	Part marks	Guidance
17	Correct image drawn, i.e. 	2	Award 1 mark for two vertices of image correctly positioned or if image has the correct size and shape but incorrectly positioned on the grid.	Must be on given grid for this mark.
18	$(x =) -4$ and $(y =) 5$	3	Award 2 marks for $(x =) -4$ or $(y =) 5$ or Award 1 mark for a correct method to eliminate one variable or for <i>their</i> two values satisfying one of the original equations.	Correct method, e.g. Multiplying one or both equations by a constant to get equal coefficients and correct consistent addition or subtraction, implied by $4y = 20$ or making x or y the subject and substituting into the other equation, e.g. $3(16 - 4y) + 8y = 28$, $\frac{28 - 8y}{3} + 4y = 16$

Question	Answer	Marks	Part marks	Guidance
19	1270 or 1271 to 1273 (cm ³)	2	Award 1 mark for $\pi \times 4.5^2$ [$\times 20$] or better.	For 2 marks, accept 405π . Or better, e.g. 63.5 to 63.6..., $\frac{81\pi}{4}$, 20.25π . Accept values of π between 3.14 and $\frac{22}{7}$ in the method.

Question	Answer	Marks	Part marks	Guidance
20	$(x =) [\pm] \sqrt{\frac{y+a}{6}}$ oe	3	Award 1 mark for correctly isolating term in x^2 and Award 1 mark for correctly isolating x^2 FT <i>their</i> previous step and Award 1 mark for correctly square rooting FT <i>their</i> previous step to a maximum of 2 marks for an incorrect answer.	e.g. $y + a = 6x^2$ e.g. $\frac{y+a}{6} = x^2$ Square root sign must extend beyond the operation sign in the numerator and below the fraction line. Note steps will vary depending on starting point and can be in any order. Always FT a correct step after <i>their</i> previous completed step, e.g. $\frac{y}{6} = x^2 - \frac{a}{6}, \frac{y}{6} + \frac{a}{6} = x^2, \sqrt{\frac{y}{6} + \frac{a}{6}} = x$ $y + a = 6x^2, \sqrt{y+a} = \sqrt{6}x, \frac{\sqrt{y+a}}{\sqrt{6}} = x$ $-y - a = -6x^2, \frac{-y-a}{-6} = x^2, \sqrt{\frac{-y-a}{-6}} = x$ (Note the final alternative equivalent answers each scoring 3 marks in these methods).
21	207 000 cao 0.0348 cao	2	Award 1 mark for each correct answer.	Correct order only. Do not accept 0.03480
22	100 3 -3	3	Award 1 mark for each correct value.	Accept 3 and -3 in either order.

Question	Answer	Marks	Part marks	Guidance
23	$(y =) -\frac{3}{2}x + 1$	2	Award 1 mark for [gradient =] $-\frac{3}{2}$ oe or $(y =) mx + 1$ where $m \neq 0$	Accept equivalents for $-\frac{3}{2}$ for 1 or 2 marks. 1 mark implied by, e.g. $\left[\frac{4 - -2}{-2 - 2} = \right] \frac{6}{-4}$ $[m =] -1.5, \frac{-3}{2}x + c, c$ can be 0 m can be left as the letter m for $y = mx + 1$

Question	Answer	Marks	Part marks	Guidance
24	111 or 110.5 to 110.6 (cm ²)	4	Award 3 marks for $\frac{1}{2} \times \pi \times \left(\frac{12}{2}\right)^2 + \frac{1}{2} \times 12 \times \sqrt{15^2 - 12^2} \text{ oe}$ or Award 2 marks for $\frac{1}{2} \times \pi \times \left(\frac{12}{2}\right)^2 \text{ oe}$ or $\sqrt{15^2 - 12^2} \text{ oe}$ or Award 1 mark for $\pi \times \left(\frac{12}{2}\right)^2 \text{ oe}$ or for $x^2 + 12^2 = 15^2 \text{ oe or better.}$	Accept answer $18\pi + 54$ for 4 marks. Oe, e.g. $\frac{1}{2} \times \pi \times 6^2 + \frac{1}{2} \times 12 \times 9$ 2 marks implied by 18π or 56.5 to 56.6 or by $AC = 9$, area of triangle = 54 Oe, e.g. $\sqrt{225 - 144} \sqrt{81}$, 1 mark implied by 36π or 113[.0] to 113.2 Or better, e.g. $15^2 - 12^2$ or 81 Marks may be awarded on diagram. For 2 marks or 1 mark you should mark to the candidate's advantage, e.g. do not withdraw marks for correct Pythagoras work if values found are not used or not used correctly in subsequent area work. Accept values of π between 3.14 and $\frac{22}{7}$

Question	Answer	Marks	Part marks	Guidance
25	1.58 or 1.576... (kg)	4	Award 3 marks for $\frac{7 \times 1.3 + 10 \times 1.5 + 14 \times 1.7 + 3 \times 1.9}{34}$ or better or Award 2 marks for $7 \times 1.3 + 10 \times 1.5 + 14 \times 1.7 + 3 \times 1.9$ or better or Award 1 mark for either of these: three correct midpoints out of 1.3, 1.5, 1.7 and 1.9 three correct frequencies out of 7, 10, 14 and 3	Accept $7 + 10 + 14 + 3$ in place of 34 For 3 marks, accept one error in one of the products implied by three values used from 9.1, 15, 23.8, 5.7 Or better, e.g. $\frac{9.1 + 15 + 23.8 + 5.7}{34}$, $\frac{53.6}{34}$ For 2 marks, accept one error in one of the products and accept midpoints as consistent values within intervals including either end of intervals. Or better, e.g. $9.1 + 15 + 23.8 + 5.7$, 53.6 Using start of intervals: 2 marks implied by $8.4 + 14 + 22.4 + 5.4$, 50.2, answer 1.48 or 1.476... Using end of intervals: 2 marks implied by $9.8 + 16 + 25.2 + 6$, 57, answer 1.68 or 1.676... May be seen on diagram. 1 mark implied by three values correct from 9.1, 15, 23.8, 5.7 (or using consistent values within intervals). Is w interval stated after correct mean found.

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Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/01**

Paper 1

March 2026

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.

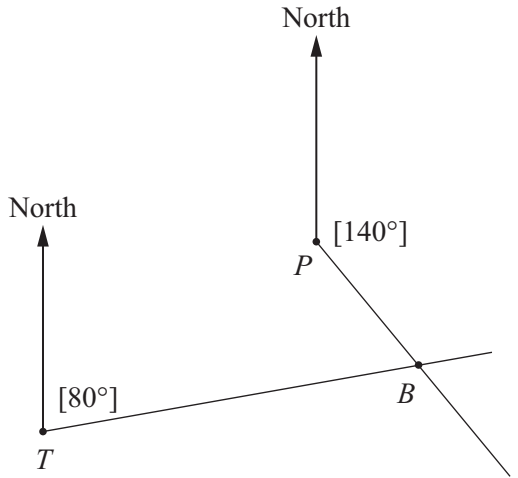
Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **12** pages. Any blank pages are indicated.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfw	not from wrong working
oe	or equivalent
soi	seen or implied

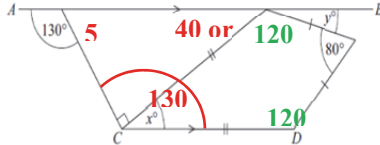
Question	Answer	Marks	Part marks	Guidance
1	160	1		
2	qualitative quantitative ☐ ☒ ☒ ☐	1		Both ticks correct for the mark. Accept any clear indication.
3	$6^0 =$ 1 $15^2 \times 15^7 =$ (15) 9 $27^{12} \div 27^3 =$ 27 9	3	Award 1 mark for each correct statement.	27 and 9 must be correct for this statement to be correct.
4	11	1		Do not accept as a ratio, e.g. 1 : 11

Question	Answer	Marks	Part marks	Guidance
5		2	Award 1 mark for one correct bearing drawn.	Tolerance $\pm 2^\circ$. For 1 or 2 marks: if no bearing line(s) there must be a point marked, not just the label <i>B</i>. For 1 mark: if two points are given, assume one point for each bearing and ignore labels. If more than two points then mark the one labelled <i>B</i> first, if no label then apply the choice rule.
6	24	2	Award 1 mark for $\left[\left(2\frac{1}{2} + 1.5 \right)^2 \right] 16$	Accept 16 given as an equivalent fraction, e.g. $\frac{64}{4}$
7	mode and it does not exist	1		Both ticks correct for the mark. Accept any clear indication.
8	$(p =) -8$	1		Do not accept 15^{-8}

Question	Answer	Marks	Part marks	Guidance
9	$(x =) 3$	1		
10	10	1		
11(a)	$\frac{1}{2}, \frac{3}{7}, \frac{4}{7}$ and $\frac{3}{7}$ in correct places on tree diagram	2	Award 1 mark for two or three correct probabilities.	
11(b)	600	1		Accept '600 out of 1500' but not $\frac{600}{1500}$
12	congruent ☒ not congruent ☐	1		Both ticks correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
13	$\frac{3}{14}$ cao	3	Award 2 marks for $\frac{4}{7} \times \frac{3}{8}$ or $\frac{12}{21} \div \frac{56}{21}$ oe or Award 1 mark for $\frac{8}{3}$ or $\frac{3}{8}$ or for $\frac{4}{7} \times$ <i>their</i> $\frac{3}{8}$	oe, e.g 2 marks for $\frac{12}{21} \times \frac{21}{56}$ 2 marks implied by $\frac{12}{56}$ oe For 1 mark, accept equivalents, e.g. $\frac{21}{56}, \frac{56}{21}$ <i>their</i> $\frac{8}{3}$ must be shown first.
14	A correct fraction in the interval $\frac{27}{56} < f < \frac{27}{53}$ e.g. ($f=$) $\frac{27}{54}, \frac{27}{55}, \frac{1}{2}, \frac{28}{56}$	1		$0.48214... < f < 0.50943...$ $\frac{1431}{2968} < f < \frac{1512}{2968}$ Numerator or denominator must not contain decimals.
15(a)	7	1		
15(b)	($h=$) 5	1		Accept inclusion of correct units (cm) but not incorrect units.

Question	Answer	Marks	Part marks	Guidance								
16	Any possible values that satisfy all three conditions: w is a whole number d is a decimal smaller than 1 $w \div d = 20$	1		Possible values include $w = 10, d = 0.5$ $w = 2, d = 0.1$ $w = 5, d = 0.25$ etc.								
17	$x \geq 2$	2	Award 1 mark for $5x - 2x \geq 8 - 2$ oe	For 1 mark, accept any inequality sign or equals sign. Do not isw. Answer $x = 2$ or 2 scores 1 mark only.								
18	(6, 2) and (9, 3)	1		Both answers correct for the mark. Accept any clear indication.								
19	$(x =) -2$ $(y =) 5$	2	Award 1 mark for $x = -2$ or $y = 5$									
20	4	1		Accept any clear indication.								
21	$n^2 + 3$	1		Accept equivalents, e.g. $n^2 + 2 + 1$								
22	0.0405	1		Answer must be decimal.								
23	<table border="1"><tr><td>will</td><td>will not</td></tr><tr><td>(✓)</td><td></td></tr><tr><td></td><td>✓</td></tr><tr><td>✓</td><td></td></tr></table>	will	will not	(✓)			✓	✓		1		Both ticks correct for the mark. Accept any clear indication.
will	will not											
(✓)												
	✓											
✓												
24	$x^2 + 7x - 30$	2	Award 1 mark for three correct terms from $x^2 + 10x - 3x - 30$	$7x$ counts as two correct terms.								
25	$(m =)[\pm]\sqrt{a^2 + y}$	2	Award 1 mark for $m^2 = a^2 + y$ or for $m = [\pm]\sqrt{their(a^2 + y)}$	Following $m^2 = their(a^2 + y)$ shown.								

Question	Answer	Marks	Part marks	Guidance																																	
26	$(x =) 40$ $(y =) 20$	4	Award 2 marks for $x = 40$ or Award 1 mark for any of these: 50 angle marked in correct place on diagram - angle alternate to x correctly marked as 40 or x on diagram $x + 90$ angle marked as 130 on diagram $130 - 90$ or $180 - (90 + 50)$ [working for triangle 40 or angle x] and Award 2 marks for $y = 20$ or Award 1 mark for 120° angle correctly marked on diagram or $2 \times \textit{their } 120 + \textit{their } x + 80 = 360$ or better.	 Implied by <i>their</i> $x = \textit{their } 40$ Common FT for 120 or y scoring 1 mark provided two 120 angles are not different: <table><tr><th>x</th><th><i>Their</i> 120</th><th><i>Their</i> y</th></tr><tr><td>20</td><td>130</td><td>30</td></tr><tr><td>30</td><td>125</td><td>25</td></tr><tr><td>50</td><td>115</td><td>15</td></tr><tr><td>60</td><td>110</td><td>10</td></tr><tr><td>70</td><td>105</td><td>5</td></tr><tr><td>80</td><td>100</td><td>-</td></tr><tr><td>90</td><td>95</td><td>-</td></tr><tr><td>100</td><td>90</td><td>-</td></tr><tr><td>110</td><td>85</td><td>-</td></tr><tr><td>120</td><td>80</td><td>-</td></tr></table> Accept as 70 and 50 if kite split into two triangles along short diagonal for 120 (<i>their</i> 120 can be split similarly). If the two 120 angles in the kite are labelled differently do not award this 1 mark. Or better, e.g. $2 \times \textit{their } 120 + \textit{their } x = 280$	x	<i>Their</i> 120	<i>Their</i> y	20	130	30	30	125	25	50	115	15	60	110	10	70	105	5	80	100	-	90	95	-	100	90	-	110	85	-	120	80	-
x	<i>Their</i> 120	<i>Their</i> y																																			
20	130	30																																			
30	125	25																																			
50	115	15																																			
60	110	10																																			
70	105	5																																			
80	100	-																																			
90	95	-																																			
100	90	-																																			
110	85	-																																			
120	80	-																																			

				or correct method to find 120 $\frac{360 - 80 - \textit{their}x}{2},$ $180 - 40 - \frac{\textit{their}x}{2},$ $140 - \frac{\textit{their}x}{2},$ or correct method to find <i>their</i> y: $40 - \frac{\textit{their}x}{2}$
--	--	--	--	---

Question	Answer	Marks	Part marks	Guidance
27	Correct frequency polygon	3	Award 2 marks for a horizontal translation of the correct polygon or Award 1 mark for four or five plots correct horizontally 105, 115, 125, 135, 145 and Award 1 mark for four or five plots correct vertically 5, 8, 4, 2, 3	Ignore lines to the left of 105 and to the right of 145. Ignore lines to the left of <i>their</i> 105 and to the right of <i>their</i> 145 Plots may be implied by ends of diagonal lines, otherwise should be a dot or cross. Ignore any bars/vertical lines drawn for full marks or part marks (bars alone or horizontal/vertical lines do not imply plots).
28	$(y =) -0.5x + 5$	2	Award 1 mark for gradient = $-\frac{1}{2}$ oe soi or $y = mx + 5 \quad m \neq 0$	For 2 marks, accept equivalents with y as the subject, e.g. $y = \frac{10 - x}{2}$ Accept equivalent fractions for $-\frac{1}{2}$ for 1 or 2 marks. Not just $-\frac{1}{2}$ alone, needs to be clearly associated with gradient, e.g. following a rise/run calculation or $-\frac{1}{2}x$. m can be left algebraic.

Question	Answer	Marks	Part marks	Guidance
29	23 100 $2n + 3$	3	Award 1 mark for each correct answer.	In this question do not accept a change of variable.

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Cambridge Lower Secondary Checkpoint

MATHEMATICS

0862/02

Paper 2

March 2026

MARK SCHEME

Maximum Mark: 50

Published

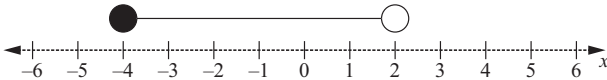
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which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

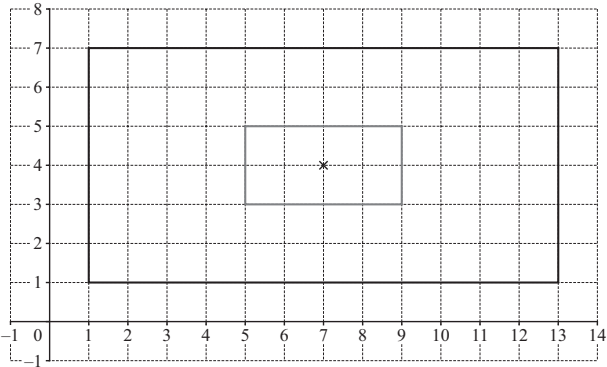
Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **10** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfw	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	6×10^4	1		
2		1		
3	(\$)18	1		
4	$\frac{27}{4}$	2	Award 1 mark for each correct answer.	In the correct order.
5	Ring drawn around point at 315 for Aug	1		Accept any clear indication, e.g. ringed in the table or just Aug ringed on the axis.
6	truefalse ☐ ☒ ☒ ☐ ☐ ☒ ☒ ☐	2	Award 1 mark for three correct answers.	Accept any clear indication.
7	3	1		
8	$\frac{4}{20}$ oe	1		Oe, e.g. 0.2, 20%, $\frac{1}{5}$, $\frac{5}{25}$

Question	Answer	Marks	Part marks	Guidance
9	Correct enlargement 	2	Award 1 mark for two vertices of image correctly positioned or if image has the correct size and orientation but incorrectly positioned on the grid or for correct centre of enlargement but incorrect scale factor 2 or 4	Accept slight inaccuracies provided the intention is clear.
10	correct not correct ☒ ☐ ☒ ☐	1		Both ticks correct for the mark. Accept any clear indication.

Question	Answer	Marks	Part marks	Guidance
11(a)	408 or 408.0 to 408.4... (cm ²)	1		Accept correct answers in terms of π that are in range, e.g. $\frac{3249}{25}\pi$, 129.96π , 130π
11(b)	368 or 367.5 to 367.7... (mm)	2	Award 1 mark for $\frac{1}{2} \times \pi \times 143$ or better.	Accept left in terms of π for 2 marks, e.g. $143 + \frac{143\pi}{2}$ Accept values of π between 3.14 and $\frac{22}{7}$ Implied by $\frac{143\pi}{2}$, $\frac{449}{2}$ to $449.4...$, 71.5π , 225, 224.5 to 224.7...
12	14.5 (s ≤ time <) 15.5 (s)	2	Award 1 mark for one correct bound or for 14.5 and 15.5 reversed.	In the correct order. Do not accept, e.g. 15.49, 15.49

Question	Answer	Marks	Part marks	Guidance
13(a)	37	1		Ignore extra terms after 37
13(b)	−2	1		
14	24 (hours)	2	Award 1 mark for 3×40 or $\frac{3}{5} = \frac{k}{40}$ or better.	Implied by 120 Or better, e.g. $40 \times \frac{3}{5}$, $40 \div \frac{5}{3}$, $40 \div 1.67$ Allow equivalent part marks in minutes, e.g. $3 \times 40 \times 60$ or 7200 or 1440
15(a)	50 87	2	Award 1 mark for each correct sentence.	In the correct order.
15(b)	16	1		Accept −16
16	$(n + 3)^2$	1		Accept equivalents, e.g. $n^2 + 6n + 9$
17	(\$)252 144	2	Award 1 mark for any of these: 247 200 - any fully correct working, e.g. $240\,000 \times 1.03 \times 1.02$ or 12 144	May be completed in stages. Accept, e.g. $1 + \frac{3}{100}$ for 1.03 but not $1 + 3\%$. Note increasing by 5% is 252 000 (0 marks) but watch out for a more accurate answer in the working in case they round 252 144 to 252 000

Question	Answer	Marks	Part marks	Guidance
18	Correct expansion of both brackets shown, $9x - 18x^2 + 2x + 18x^2$ leading to $11x$ with no errors.	2	Award 1 mark for $9x - 18x^2$ or $2x + 18x^2$	
19	12	2	Award 1 mark for $360 \div (180 - 150)$ oe or $\frac{180(n-2)}{n} = 150$ oe	Oe, e.g. $\frac{360}{30}$ Oe, e.g. $180n - 360 = 150n$
20	A and B coordinates where $x_1 + x_2 = 2$ and $y_1 + y_2 = 4$ e.g. (0, 0) and (2, 4) (0, 1) and (2, 3) (1, 1) and (1, 3) (0.5, 2) and (1.5, 2) (-1, -2) and (3, 6)	2	Award 1 mark for any A and B coordinates where $x_1 + x_2 = 2$ or $y_1 + y_2 = 4$	Award 0 if either of the points is (1, 2).

Question	Answer	Marks	Part marks	Guidance												
21(a)	<table><tr><td></td><td>v < 54</td><td>v = 54</td><td>v > 54</td></tr><tr><td>A</td><td></td><td></td><td>✓</td></tr><tr><td>B</td><td></td><td>✓</td><td></td></tr></table>		v < 54	v = 54	v > 54	A			✓	B		✓		1		Both ticks correct for the mark. Accept any clear indication.
	v < 54	v = 54	v > 54													
A			✓													
B		✓														
21(b)	12.1 (cm ²) cao	4	Award 3 marks for $\sqrt{7^2 + 5^2} \times 3.5 - 4 \times 4.5$ oe or Award 2 marks for either of these $\sqrt{7^2 + 5^2} \times 3.5$ oe $7^2 + 5^2$ or better and 4×4.5 oe or Award 1 mark for any of these $7^2 + 5^2$ or better 4×4.5 oe <i>their</i> more accurate answer shown, then correctly rounded to 1dp.	Oe, e.g. 12.10 to 12.11 Oe, e.g. 30.1 to 30.11 or $\frac{7}{2}\sqrt{74}$ Or better, e.g. 74, $\sqrt{7^2 + 5^2}$, $\sqrt{74}$, 8.6[0...] 4×4.5 implied by 18												

Question	Answer	Marks	Part marks	Guidance
22(a)	$30 (\leq m <) 40$	1		Both values in the correct order for the mark.
22(b)	44 (g)	3	Award 2 marks for correct method to find estimated total $35 \times 24 + 45 \times 12 + 55 \times 9 + 65 \times 5$ or Award 1 mark for three correct midpoints from 35, 45, 55 and 65 or for method to find estimated total using consistent points within ranges.	isw correct answer followed by '$40 \leq m < 50$' Implied by $840 + 540 + 495 + 325$ or 2200 Implied by three correct from 840, 540, 495 and 325 E.g. using end points of intervals.
23	$(x =) 27$ and $(y =) 1.5$ oe	3	Award 1 mark for $(x =) 27$ and Award 2 marks for $(y =) 1.5$ oe or Award 1 mark for $8 = 16(y - 1)$ or better.	Award 2 marks for any correct equivalent, e.g. $\frac{24}{16}$ Or better, e.g. $\frac{8}{16} = y - 1$, $8 = 16y - 16$, or 1.5 embedded.

Question	Answer	Marks	Part marks	Guidance
24	7.5 and 2.7	2	Award 1 mark for one correct answer or answers 12 and 7.2 or 7.5 and 2.7 seen in working.	Accept answers in either order. Accept answers in a ratio provided order correct, i.e. 4.5 : 7.5, 2.7 : 4.5
25	$2 + 5x$	2	Award 1 mark for $3(2y + 5xy)$ or $y(6 + 15x)$ soi or better or answer $2 + kx$, $k \neq 15y$ or 0 or answer $k + 5x$, $k \neq 6y$ or 0	Implied by, e.g. $\frac{2y + 5xy}{y}$, $\frac{6+15x}{3}$, $\frac{2+5x}{1}$, Or better, e.g. $3y(2 + 5x)$ Accept with a denominator of 1 for 1 mark.

Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/01**

Paper 1 Downloaded by Success groups (Suha & Nesrine)

May 2026**MARK SCHEME**Maximum Mark: 50

Published

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the curriculum. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document has **12** pages.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance
1	kilometre	1		Accept any clear indication, e.g. km, 'kilometre' ticked or ringed in the box.
2	8	1		
3	75 (cm ²)	1		
4	$(h =) [\pm] \sqrt{w}$	1		Accept $w^{\frac{1}{2}}$
5	$\frac{1}{6}$ cao	2	Award 1 mark for $\frac{4}{9} \times \frac{k}{8}$ or $\frac{c}{9} \times \frac{3}{8}$ or better.	Or better, e.g. $\frac{1}{9} \times \frac{3}{2}$, $\frac{4}{3} \times \frac{1}{8}$, $\frac{12}{72}$, $\frac{6}{36}$, $\frac{3}{18}$ Must be fractions for part marks.
6	both	1		Accept any clear indication.
7	$\frac{5}{9} = 0.5\dot{5}$	1		Accept any clear indication.

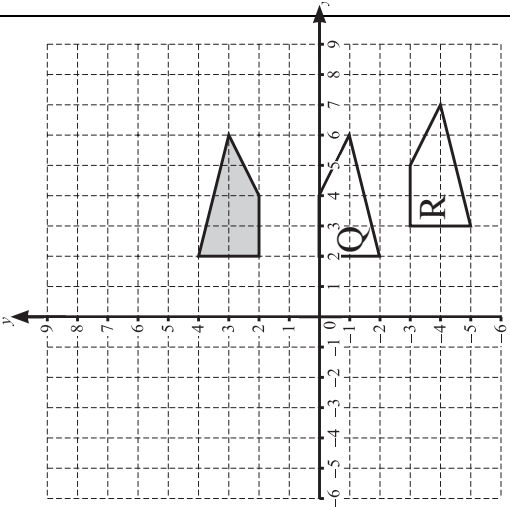
Question	Answer	Marks	Part marks	Guidance
8(a)	A correct explanation, e.g. • he has not measured clockwise • it should be 318° • the bearing should be bigger than 180° • it should be a reflex angle.	1		Accept any correct explanation. BOD for these: • bearings are on the right side. Do not accept vague statements, e.g. • he did not measure the angle properly • it should be more than 42 • he measured from the North line to the nearest line • the bearing should be the bigger one. Clear incorrect statements (even if with a correct statement) invalidate the mark, e.g. • it should be 138°/it should be 285 • it should be an obtuse angle • he gave the bearing of C from B.
8(b)	105° and an answer in the range 55 to 59 (km)	2	Award 1 mark for each correct answer.	
9	$\sqrt{24.89}$ $(-6.12)^2$ $\sqrt{144.2}$ 12 5 36	1		All three lines correct for the mark. Accept any clear indication.
10	$(n + 5)^2$	1		Accept expanded, e.g. $n^2 + 10n + 25$ but do not isw, e.g. $(n + 5)^2$ becoming $n^2 + 25$ Do not accept an equation, e.g. $n = (n + 5)^2$, but accept with words, e.g. 'number = $(n + 5)^2$ '

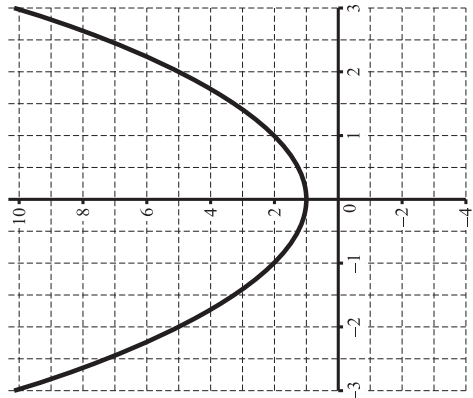
Question	Answer	Marks	Part marks	Guidance										
11	<table><tr><td>correct</td><td>not correct</td></tr><tr><td></td><td>✓</td></tr><tr><td>✓</td><td></td></tr></table>	correct	not correct		✓	✓		1		Both ticks correct for the mark. Accept any clear indication.				
correct	not correct													
	✓													
✓														
12	<table><tr><td>true</td><td>false</td></tr><tr><td></td><td>✓</td></tr><tr><td>✓</td><td></td></tr><tr><td>✓</td><td></td></tr><tr><td></td><td>✓</td></tr></table>	true	false		✓	✓		✓			✓	2	Award 1 mark for three correct ticks.	Accept any clear indication.
true	false													
	✓													
✓														
✓														
	✓													
13	140 (km)	2	Award 1 mark for $210 \div (5 - 2) [\times k]$ oe where $k = 1, 2$ or 5	1 mark may be implied by 70 or 350										
14	$(k =) 13$	1		Ignore any units given.										

Question	Answer	Marks	Part marks	Guidance																									
15	15	2	Award 1 mark for answer figs ±15 or for $\frac{12 \times 5}{4}$ or any equivalent calculation without decimals (ignoring +/– signs) or for any of these (ignoring +/– signs) • $1.2 \times 5 = 6$ oe • $5 \div 0.4 = 12.5$ oe • $1.2 \div 0.4 = 3$ oe.	E.g. 150, 1.5, –15, –0.15 E.g. $5 \times \frac{12}{10} \div \frac{4}{10}$ E.g. 1.2×5 could be implied by $\frac{6}{k}$ Oe, e.g. $50 \div 4 = 12.5$ Oe, e.g. $12 \div 4 = 3$, allow $\frac{3}{1}$																									
16(a)	<table><tr><td colspan="5">countryside</td></tr><tr><td>7</td><td>7</td><td>3</td><td>2</td><td></td></tr><tr><td></td><td>2</td><td>2</td><td>3</td><td></td></tr><tr><td></td><td>8</td><td>1</td><td>4</td><td></td></tr><tr><td></td><td></td><td>0</td><td>5</td><td></td></tr></table> and correct key: 32 (countryside) and 38 (town)	countryside					7	7	3	2			2	2	3			8	1	4				0	5		3	Award 2 marks for a correct, ordered stem-and-leaf diagram or Award 1 mark for two correctly ordered rows and Award 1 mark for correct key.	Ignore any numbers added to the town centre side.
countryside																													
7	7	3	2																										
	2	2	3																										
	8	1	4																										
		0	5																										
16(b)	<table><tr><td>town centre</td></tr><tr><td>48</td></tr><tr><td>16</td></tr></table>	town centre	48	16	2	Award 1 mark for each correct answer.																							
town centre																													
48																													
16																													

Question	Answer	Marks	Part marks	Guidance																																																												
17(a)	All probabilities correctly placed 0.55 0.4 0.45 0.55	2	Award 1 mark for 0.4 or 0.55 in one correct place.	Accept equivalent fractions or percentages.																																																												
17(b)	$\frac{8}{45}$	2	Award 1 mark for clearly identifying eight outcomes, e.g. <table><tr><td>5</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr><tr><td>4</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td></tr><tr><td>3</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr><tr><td>2</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td><td>(x)</td><td>x</td></tr><tr><td>1</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr></table> or $\frac{8}{k}$ where $k > 8$ or $\frac{c}{45}$ where $0 < c < 45$ or $\frac{2}{5} \times \frac{4}{9}$	5	x	x	x	x	x	x	x	x	x	4	x	(x)	x	(x)	x	(x)	x	(x)	x	3	x	x	x	x	x	x	x	x	x	2	x	(x)	x	(x)	x	(x)	x	(x)	x	1	x	x	x	x	x	x	x	x	x		1	2	3	4	5	6	7	8	9	Is wrong incorrect cancelling, or converting to decimal or percentage. The mark for $\frac{8}{k}$ or $\frac{c}{45}$ can be awarded before any cancelling, e.g. $\frac{8}{14} = \frac{4}{7}$ scores 1 k and c are whole numbers.
5	x	x	x	x	x	x	x	x	x																																																							
4	x	(x)	x	(x)	x	(x)	x	(x)	x																																																							
3	x	x	x	x	x	x	x	x	x																																																							
2	x	(x)	x	(x)	x	(x)	x	(x)	x																																																							
1	x	x	x	x	x	x	x	x	x																																																							
	1	2	3	4	5	6	7	8	9																																																							

Question	Answer	Marks	Part marks	Guidance
18	$(y =) \frac{1}{2}x + 3$	2	Award 1 mark for gradient = $\frac{1}{2}$ oe or $(y =) mx + 3$ where $m \neq 0$ or $c = 3$	For 2 marks, accept equivalents with y as the subject, e.g. $y = \frac{x+6}{2}$ Accept equivalent fractions or decimal for $\frac{1}{2}$ for 1 or 2 marks. Not just $\frac{1}{2}$ alone, needs to be clearly associated with gradient, e.g. following a rise/run calculation or $\frac{1}{2}x$. m can be left algebraic. Not for ‘y-intercept = 3’ alone, it must be clearly associated with c.
19	12	2	Award 1 mark for $\frac{360}{180-150}$ oe or $\frac{180(n-2)}{n} = 150$ oe	
20	0.00123	1		Allow $\frac{123}{100000}$ but not with decimals, e.g. $\frac{12.3}{10000}$

Question	Answer	Marks	Part marks	Guidance
21	✓ ✓	1		Both ticks correct for the mark. Accept any clear indication.
22	10, 11, 12, 13, 14 or 15	1		
23	Shape R correct. Vertices at $(3, -3)$, $(5, -3)$, $(3, -5)$, $(7, -4)$ 	2	Award 1 mark for correct position of shape Q or for correct translation of $\begin{pmatrix} 1 \\ -3 \end{pmatrix}$ of <i>their</i> shape Q.	Award 2 marks for shape R correct with or without shape Q drawn. Ignore labels for 2 marks. Accept slight inaccuracies provided the intention is clear, e.g. unruled. (2-mark shape inside green overlay). (1-mark shape inside pink overlay). Ignore labels. <i>Their</i> shape R does not have to be congruent to the original shape for the FT but must all fit on grid. At least one of the shapes must be labelled for the FT.

Question	Answer	Marks	Part marks	Guidance																
24	true ☒ false ☐ ☒ ☒ ☐	2	Award 1 mark for three correct ticks.	Accept any clear indication.																
25	(LB $\Rightarrow$) 11.295 cao (UB $\Rightarrow$) 11.305 cao	2	Award 1 mark for each correct bound or for both values correct but reversed.																	
26	A correct curve for values of x between -3 and 3 	4	Award 2 marks for correctly completed table of values <table><tr><td>x</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>10</td><td>5</td><td>2</td><td>1</td><td>2</td><td>5</td><td>10</td></tr></table> or Award 1 mark for three correct values in table and Award 1 mark for five points correctly plotted, FT <i>their</i> table.	x	-3	-2	-1	0	1	2	3	y	10	5	2	1	2	5	10	If clearly ruled, but otherwise correct, award 3 marks. Correct points can imply these marks. For this mark, curve can imply points. If more than 7 points plotted firstly mark points on any curves/lines. In the absence of a curve apply the choice rule.
x	-3	-2	-1	0	1	2	3													
y	10	5	2	1	2	5	10													

Question	Answer	Marks	Part marks	Guidance
27	$250 - x^2 - 3x$ (cm ²) oe simplified	3	Award 1 mark for a correct expression $20 \times 12 - (x - 2)(x + 5)$ oe or better and Award 1 mark for four correct terms from either of these $\pm x^2 + 2x - 5x \pm 10$ $\pm x^2 - 2x + 5x \pm 10$ or for three correct terms from either of these $x^2 - 2x + 5x - 10$ or better $-x^2 + 2x - 5x + 10$ or better or for (if finding a rectangle area from part of the shaded shape) the expansion of <i>their</i> brackets with three terms correct oe. Must be of the form $(\pm x \pm a)(\pm x \pm b)$ with at least one negative sign.	Oe simplified, e.g. 3 marks for $250 - (x^2 + 3x)$ Accept omission of final bracket. Or better, e.g. 1 mark for $240 - (x - 2)(x + 5)$ First two marks for these: $240 - (x^2 + 3x - 10)$, $240 - x^2 - 3x + 10$ Accept expansion first then the first mark is for $20 \times 12 - (\text{their expansion of } (x - 2)(x + 5))$ oe. $\pm 3x$ counts as two correct terms. $3x$ counts as two correct terms. $-3x$ counts as two correct terms. If adding two or more rectangles: Award 1 mark for a correct expression, e.g. $(14 - x)(x + 5) + 12(15 - x)$ oe $20(14 - x) + (15 - x)(x - 2)$ oe $(14 - x)(x + 5) + (14 - x)(15 - x) + (15 - x)(x - 2)$ and Award 1 mark for three correct terms from expanding, e.g. $(14 - x)(x + 5) = 14x + 70 - x^2 - 5x$ $(15 - x)(x - 2) = 15x - x^2 - 30 + 2x$ $(14 - x)(15 - x) = 210 - 15x - 14x + x^2$ Note for method: $14 - x$ can be $12 - (x - 2)$ $15 - x$ can be $20 - (x + 5)$ then must reach a comparable number of correct terms when expanding.

Appendix – additional guidance for marking responses from candidates who have used A3 enlarged 36pt font scripts

The table below lists modifications made on the A3 script with 36pt font, only where a different approach to marking is required.

In all cases, use your professional judgement when marking and add a comment if required. If in doubt, contact your assessment manager.

Question	Modification	Marks	Marking guidance
8(b)	Image enlarged by scale factor 2	2	Use standard mark scheme but replace: an answer in the range 55 to 59 (km) with: an answer in the range 110 to 120 (km)

Cambridge Lower Secondary Checkpoint

MATHEMATICS**0862/02**

Paper 2 Downloaded by success groups (Suha & Nesrine)

May 2026**MARK SCHEME**Maximum Mark: 50

Published

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the curriculum. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document has **12** pages. Any blank pages are indicated.

Mark scheme annotations and abbreviations

FT	follow through after error
SC	special case mark
cao	correct answer only
dep	dependent
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
soi	seen or implied

Question	Answer	Marks	Part marks	Guidance									
1	24(°)	1											
2	72	1		Accept ± 72 or −72									
3	(p =) 29	1											
4	7 × 10 ⁴ cao	1		Accept with trailing zeros.									
5	14	1											
6	height in cm	1		Accept any clear indication.									
7	<table><tr><td>input</td><td>output</td></tr><tr><td>(4)</td><td>64</td></tr><tr><td>7</td><td>(343)</td></tr></table>	input	output	(4)	64	7	(343)	2	Award 1 mark for each correct answer.	Do not accept 7 ³ for 7			
input	output												
(4)	64												
7	(343)												
8	$\frac{9}{10}$ oe	1		Is w incorrect: cancelling, converting to a decimal or percentage.									
9	(x =) 6 (y =) 3	2	Award 1 mark for x = 6 or y = 3 or for two values that satisfy one of the original equations.										
10	<table><tr><td></td><td>integer</td><td>not an integer</td></tr><tr><td>natural</td><td>7</td><td></td></tr><tr><td>not natural</td><td>−8</td><td>0.3</td></tr></table>		integer	not an integer	natural	7		not natural	−8	0.3	1		All three answers correct for the mark and no extras.
	integer	not an integer											
natural	7												
not natural	−8	0.3											

Question	Answer	Marks	Part marks	Guidance
11	50 (km/h)	1		
12(a)	350 (cm ³)	1		
12(b)	9	1		Accept any clear indication.
13	$Q = (4, 8)$	2	Award 1 mark for each correct coordinate.	

Question	Answer	Marks	Part marks	Guidance
14	A correct reason related to area used, e.g. • she is only using 1 m² of her garden • it is a small part of the garden • she may not have many plants in that part of the garden or sample size, e.g. • her sample size is small • she is only measuring five plants • she only picks one sample or height sampled, e.g. • plants that are near each other could be similar heights • she only measures the five tallest • she hasn't measured a mixture of heights • she hasn't picked the plants at random.	1		Accept equivalent explanations, e.g. • she only picked part of the garden • they could all be the same type of plant • she doesn't measure the shorter plants • the plants in that area/different areas may have different growing conditions • she only selects some plants in that area she should select them all. Accept suggestions as to how she could have improved her sampling method, e.g. • she should have measured different places/selected more plants. Do not accept these alone (but ignore if also with a correct reason): • she picked part of the garden/the tallest plants/five plants – <i>not using 'only' is just repeating the question</i> • some plants may be taller/shorter – <i>true of all samples</i> • plants are not all the same height – <i>true of all samples</i> • she only selects some plants she should select them all – <i>do not accept a census alone</i> • she does not have enough data.

Question	Answer	Marks	Part marks	Guidance									
15	28	2	Award 1 mark for $\frac{56}{7}$ oe or $h^3 = 8$ or $h = 2$ or for any 3 consecutive terms from 1.75, 3.5, 7, 14, 28, 56, 112, 224..... etc.	Allow for recognition of correct relationship between 56 and 7, e.g. $56 \div 8 = 7$, $7 \times 8 = 56$ Allow [term-to-term rule] $\times 2$ 8 alone or 2 alone scores 0									
16	$y = 4x + 7$ written in the box but not in either circle	1											
17	$(t =) 4$ $(w =) 2$	2	Award 1 mark for each correct answer or for $(t =) 13^4$ and $(w =) 17^2$										
18	<table><tr><td>$-5, -3, -1, 1$</td><td>Subtract 10 [from each term in sequence A]</td><td>$(2n - 7)$</td></tr><tr><td>$15, 21, 27, 33$</td><td>(Multiply each term in sequence A by 3)</td><td>$6n + 9$ oe, e.g. $3(2n + 3)$</td></tr><tr><td>$(-5, -7, -9, -11)$</td><td>Multiply [each term in sequence A] by -1</td><td>$-2n - 3$ oe, e.g. $-(2n + 3)$</td></tr></table>	$-5, -3, -1, 1$	Subtract 10 [from each term in sequence A]	$(2n - 7)$	$15, 21, 27, 33$	(Multiply each term in sequence A by 3)	$6n + 9$ oe, e.g. $3(2n + 3)$	$(-5, -7, -9, -11)$	Multiply [each term in sequence A] by -1	$-2n - 3$ oe, e.g. $-(2n + 3)$	3	Award 2 marks for four correct boxes or Award 1 mark for two correct boxes.	Ignore anything added to row A and terms following the first four. Allow equivalent statements, e.g. for row E, accept 'make each term negative'. Accept n th terms unsimplified, e.g. $2n + 3$
$-5, -3, -1, 1$	Subtract 10 [from each term in sequence A]	$(2n - 7)$											
$15, 21, 27, 33$	(Multiply each term in sequence A by 3)	$6n + 9$ oe, e.g. $3(2n + 3)$											
$(-5, -7, -9, -11)$	Multiply [each term in sequence A] by -1	$-2n - 3$ oe, e.g. $-(2n + 3)$											
19	(\$)1026	2	Award 1 mark for $1200 \times \left(1 - \frac{5}{100}\right) \times \left(1 - \frac{10}{100}\right)$ oe	Award 0 for answer 1020 (a common incorrect method of decreasing by 15%).									

Question	Answer	Marks	Part marks	Guidance
20	941 to 942 (mm ²)	3	Award 2 marks for $26^2 + \pi \times \left(\frac{26}{2}\right)^2 \div 2$ oe or Award 1 mark for any of these $\pi \times \left(\frac{26}{2}\right)^2$ or figs 530.6 to 531.1..., $\pi \times \left(\frac{26}{2}\right)^2 \div 2$ or figs 265 to 266 $26^2 + k\pi$, where $k > 0$, working must be shown.	Accept values of π between 3.14 and $\frac{22}{7}$ If converting to different units still award the method marks if figs 26 used, e.g. answer figs 941 to 942 scores 2 marks. Allow figs 1206 to 1207.1... (adding on 26^2) to imply $\pi \times \left(\frac{26}{2}\right)^2$ Do not accept $26^2 + k\pi + c$ 26^2 implied by figs 676 Common wrong working for 1 mark: $26^2 + \pi \times 26^2 \div 2$

Question	Answer	Marks	Part marks	Guidance
21	43 and a correct inequality, e.g. $7k - 6 < 50$ or	4	Award 3 marks for answer 43 without a correct inequality shown or Award 2 marks for $k < 8$ or $k = 7$ or Award 1 mark for either of these $7k - 6 < 50$ or better $7 \times \text{their } k - 6$ correctly evaluated where k is 1, 2, 3, 4, 5 or 6	Accept 43 and a correct inequality shown, e.g. $7k < 56$ for 4 marks but not just $k < 8$ Accept 7 as final answer for 2 marks. For this mark, allow an equation or incorrect inequality sign, e.g. $7k = 56$ scores this mark Correctly reaching 1, 8, 15, 22, 29 or 36
22	Enlargement (scale factor) 4 (3, 1)	3	Award 1 mark for each part correct.	Award 0 marks if more than one transformation but extra properties treat as choice. Allow 3, 1 without brackets. Do not accept centre as a column vector but do not treat as an additional transformation.

Question	Answer	Marks	Part marks	Guidance
23	162 (cm)	3	Award 2 marks for correct method to find the total $2 \times 145 + 5 \times 155 + 10 \times 165 + 3 \times 175$ or Award 1 mark for three correct midpoints from 145, 155, 165, 175 or for correct method to find an estimated total using consistent points within range.	For 3 marks, isw answer $160 \leq h < 170$ following 162 found. For 2 marks, accept one error or omission, e.g. one midpoint incorrect but then correct <i>f</i> $\times$ <i>their</i> midpoint. Implied by $290 + 775 + 1650 + 525$ or 3240 Allow the marks for the method for the total and the midpoints even if not used in working leading to the answer. e.g. using end points of intervals, may be implied by $280 + 750 + 1600 + 510$, 3140 or 157 $300 + 800 + 1700 + 540$, 3340 or 167

Question	Answer	Marks	Part marks	Guidance								
24	Finds the correct distance in metres 53.45 to 53.5... (m) or 53 450 to 53 504 (mm) and 60 000 (mm)	4	Award 3 marks for full method $2 \times \pi \times 304 \times 28 \div 1000$ oe $2 \times \pi \times 304 \times 28$ oe and 60×1000 or Award 2 marks for $2 \times \pi \times 304 \times 28$ oe ignoring incorrect unit conversions $2 \times \pi \times 304 \div 1000$ oe or Award 1 mark for either of these: $2 \times \pi \times 304$ oe ignoring incorrect unit conversions $k\pi \div 1000$ where $k > 1$	Accept values of π between 3.14 and $\frac{22}{7}$ For 4 marks, accept 53, 53.4 or 54, only with correct working or more accurate correct value seen. Oe, e.g. $2 \times \pi \times 0.304 \times 28$ 60×1000 implied by 60 000 Implied by figs 53 450 to 53 504 Oe, e.g. $2 \times \pi \times 0.304$ implied by 1.909 to 1.911 Implied by figs 1909 to 1911 E.g. $\pi \times 304^2 \div 1000$ scores 1 mark. <table><tr><td colspan="2">If working in cm:</td></tr><tr><td>4 marks for</td><td>5345 to 5350.4 (cm) and 6000 (cm)</td></tr><tr><td>3 marks for</td><td>$2 \times \pi \times \frac{304}{10} \times 28$ oe and 60×100</td></tr><tr><td>1 or 2 marks</td><td>Apply normal scheme</td></tr></table>	If working in cm:		4 marks for	5345 to 5350.4 (cm) and 6000 (cm)	3 marks for	$2 \times \pi \times \frac{304}{10} \times 28$ oe and 60×100	1 or 2 marks	Apply normal scheme
If working in cm:												
4 marks for	5345 to 5350.4 (cm) and 6000 (cm)											
3 marks for	$2 \times \pi \times \frac{304}{10} \times 28$ oe and 60×100											
1 or 2 marks	Apply normal scheme											

Question	Answer	Marks	Part marks	Guidance
25	$n^2 + 3$ oe	2	Award 1 mark for any quadratic n th term as final answer or for second difference of 2 found.	At least two second differences shown.
26	$(x =) 24$	3	Award 1 mark for $1040 \div 40$ and Award 1 mark for $10^2 + x^2 = (their\ 26)^2$ or better.	Implied by 26, may be on diagram. Allow 26 as answer for 1 mark. <i>Their</i> 26 must come from correct method. Or better, e.g. $\sqrt{676 - 100}$, $\sqrt{576}$

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