Cambridge Assessment International Education

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.

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

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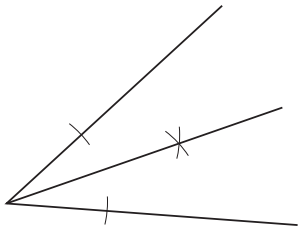
[Turn over

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 $\frac{\pi \times 4.1^2 \times 7}{2^3}$ oe **or** Award 1 mark for $\pi \times 4.1^2 \times 7$ oe **or** 2^3 oe **or** *their* 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° ≠ 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 ÷ 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 • $\frac{\text{20 more pizzas}}{324} \times 360$ 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(°) 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 $\frac{180}{5+8+3}$ [× 8] oe **or** $90 \div 8$ **or** $\frac{8}{5+8+3}$ [× 180] oe **or** recognition that 8 is half of 16 without mentioning or using 180(°).	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. x (0) (6) **12** y **20** **10** (0) **and** Correct line from (0, 20) to (12, 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 *their* table provided *their* 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.
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 *their 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 × **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(green from first bag) = 0.7 oe • P(green from second bag) = 1 – *their* 0.4 correctly evaluated • [P(red from second bag) =] 0.12 ÷ 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 *their* perimeter × 23	15 may be on diagram. 2 marks implied by 345 Implied by 84 Or better, e.g. $9^2 + 12^2$, 225, $\sqrt{9^2 + 12^2}$, $\sqrt{225}$ *Their* 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 *their* 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).