CAMBRIDGE
International Education

Cambridge International AS & A Level

THINKING SKILLS **9694/12**

Paper 1 Problem Solving **May/June 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 Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' 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 Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

This document consists of **9** printed pages.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	Correct item
	Incorrect item
	Individual mark of partial credit
	Double mark of partial credit
	Essential element of answer/working missing
	Judged to be not good enough to earn the relevant credit
	Benefit of doubt
	Correct follow through
	Transcription error
	Special case
	Working seen but no credit awarded; blank page checked
Highlighter	Use anywhere it is helpful to clarify the marking

NOTES FOR MARKERS

Working

Where a final answer is underlined in the mark scheme, full marks are awarded for a correct answer, regardless of whether there is any supporting working, unless an exception is noted in the mark scheme.

For partial credit, the evidence needed to award the mark will usually be shown on its own line in the mark scheme, or else will be defined in italic text.

For explanations and verbal justifications, apply the principle of 'words to that effect'.

Units

Unless required by the question or mark scheme, units such as $ do not need to be seen to award the marks.

No response

If there is any attempt at a solution award 0 marks not NR. "-" or "?" constitute no attempt at a solution.

Abbreviations

The following abbreviations may be used in a mark scheme:

AG answer given (on question paper)
awrt answer which rounds to
dep mark depends on earlier, asterisked (*), mark
ft follow through (from earlier error)
oe or equivalent
SC special case
soi seen or implied

Question	Answer	Marks
1(a)	$13.30	1
1(b)	6	1

Question	Answer	Marks
2(a)	07:18	1
2(b)	07:27	1

Question	Answer	Marks
3	For least number of days of reading, books have 270, 324, 418 pages **[1]** Number of days of reading is 1012/40 = 25.3 **[1]** or 26 5th (September)	3

Question	Answer	Marks
4(a)	6 yellow 2 blue and 2 green 1 blue, 1 green and 3 yellow *1 mark for any two correct in a list of no more than three*	2
4(b)	5 green 2 blue, 2 green and 1 yellow *1 mark for one correct in a list of no more than two*	2
4(c)	8	1

Question	Answer	Marks
5(a)	25.6 – 18.2 + 2 = 9.4	1
5(b)	(25.6 – 24.5) + (40.6 – 32.4) + 4 = 13.3	1
5(c)	25.6 + 2 + 40.6 + 2 + 18.9 = 89.1 *SC: 1 mark for 85.1 if their (a) is 7.4*	1
5(d)	Winner is James **[1]** with 19 points **[1]** *SC: 1 mark for 'James has 19 points' when this is not given as final answer*	2

Question	Answer	Marks
6	2759; 3668; 4577; 5486; 6395 *Award marks as follows:* **Number of answers given** **Number correct** |	1	2	3	4	5	6	7	8	9
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1	0	0	0	0	0	0	0	0	0
2		**1**	0	0	0	0	0	0	0
3			**2**	**1**	0	0	0	0	0
4				**2**	**2**	**1**	0	0	0
5					**3**	**2**	**2**	**1**	0	**3**

Question	Answer	Marks
7	169 km *1 mark for 127 and 106 OR 63 – 42 = 21*	**2**

Question	Answer	Marks
8(a)	Toni: 10800 seconds ÷ 40 = 270 Kevin: 10800 seconds ÷ 60 = 180 *1 mark for either* 450	**2**
8(b)(i)	Toni writes 3 × 60 × 60/25 = 432 invitations **[1]** Kevin does not have time to put the last one into an envelope 431	**2**
8(b)(ii)	Kevin puts 431 invitations in envelopes in 143 mins 40 secs – so he is waiting for 180 mins – 143 mins 40 secs = 36 mins 20 secs or 2180 secs ***Alternative solution*:** He has to wait 25 seconds for the first invitation And 5 seconds for each subsequent invitation And 5 seconds to wait at the end 25 + 430 × 5 + 5 = 2180 seconds	**1**

Question	Answer	Marks
9(a)	A B C D E F 2 1 5 3 1 3 M N 4 P **[1]** Score: (19 + 12 =) 31 **[1]**	**2**
9(b)	Up to 3 bonus lines can be made **[1]**, worth 36 points. The total of the points for correct answers is 30. 66 *SC: 1 mark for answer of 54 (which has bonus of 24 instead of 36)*	**2**
9(c)	There are two possibilities: A 3 C 5 E 2 G 4 1 4 5 2 M 3 O 1 A 3 C 4 E 2 G 5 1 4 5 2 M 3 O 1 *2 marks for either grid* *1 mark for the five numbers 3, 4, 4, 5 and 5 placed in squares D, H, J, K and N in any order*	**2**
9(d)	(Total score =) 24 **[1]** It is not possible to make a sum of 12 from 4 figures without 1s or 2s **[1]**	**2**

Question	Answer	Marks
10(a)	12	**1**
10(b)	There is 1750 g of cereal in total, so the maximum number of days is 1750 / 90 = 19 **[1]** Karl will eat 19 × 30 = 570 g of the sugar-covered cereal, so Peter will have this cereal at most (1000 – 570) / 30 = 14	**2**

Question	Answer	Marks
11(a)	Red: $24.00 Yellow: $37.20 Green: $15.00 Blue: $12.80 *1 mark for the correct cost for any two of the colours* *OR for savings total $47* $89(.00)	**2**
11(b)	$80 from YRG, YRG, YGB, YB, Y *2 marks for $80.60 from YRG, YGB, YBR, YG, Y* *or for $82.10 from YRG, YGB, YGB, YR, Y* *OR* *1 mark for $86.60 from YRG, YRG, YG, YB, YB* *OR* *1 mark for YRG, YRG, YGB, YB, Y identified as optimal solution with no or incorrect total amount*	**3**

Question	Answer	Marks
12(a)	a–e could have been the minimum of 10 each **[1]** for f to be not the larger the original must still be at least 14, so 14 + 10 + 10 + 10 + 10 + 10 + 14 = 78	**2**
12(b)	a and b could be 10 **soi [1]** so 226/2 = 113	**2**

Question	Answer	Marks
13(a)	130	**1**
13(b)	Total of all talk capacities = 620 620 / 4 = 155 **[1]** Since all capacities are multiples of 10, the maximum is 150, which can be achieved as e.g. 60 + 60 + 30 50 + 50 + 50 40 + 40 + 40 + 30 40 + 40 + 30 + 30 + 30 *SC: 1 mark for no final answer but schedule for 150 seen*	**2**