CAMBRIDGE
International Education

Cambridge International AS & A Level

THINKING SKILLS **9694/13**

Paper 1 Problem Solving **May/June 2026**

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

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 syllabus. 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.

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General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: • the specific **content** defined in the mark scheme • the specific **skills** defined in the mark scheme or in the level descriptions • the **standard of response** required as exemplified by the standardisation scripts.
2	Examiners must award **whole marks** (not half marks, or other fractions).
3	Examiners must award marks **positively**. This means that: • marks are not deducted for errors or omissions • marks are awarded for correct/valid answers as defined in the mark scheme and also for **other valid answers** which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate • the quality of spelling, punctuation and grammar are judged **only** when the mark scheme indicates that these features are **specifically assessed** in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must **consistently** apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the **full range of marks** defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and **must not** award marks with grade thresholds or grade descriptions in mind.

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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
1	Individual mark of partial credit
2	Double mark of partial credit
^	Essential element of answer/working missing
NGE	Judged to be not good enough to earn the relevant credit
BOD	Benefit of doubt
FT	Correct follow through
TE	Transcription error
SC	Special case

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Annotation	Meaning
SEEN	Working seen but no credit awarded; blank page checked
Highlighter	Use anywhere it is helpful to clarify the marking

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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
FA	final answer
ft	follow through (from earlier error)
oe	or equivalent
SC	special case
soi	seen or implied

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Question	Answer	Marks	Guidance
1(a)	He has counted himself twice **oe**	**1**	
1(b)	18	**1**	

Question	Answer	Marks	Guidance
2	65 kg	**1**	

Question	Answer	Marks	Guidance
3(a)	H, B, S, and R/W cost $30 **[1]** Not enough money to add G or M, but can do W/R 5 *OR* All activities for all 3 would cost $62.25 Need to remove $12.25 **[1]** Need to remove at least two activities 5	**2**	Implied by H, B, S, R and W cost $39.75 $20.75 per person $4.08/9
3(b)	Skydrop and Big Wheel **or** Miniature Golf and Big Wheel	**1**	
3(c)	Five most expensive cost $17 $6.25	**1**	Ignore conversion to a percentage once correct answer seen

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Question	Answer	Marks	Guidance
4(a)	Scores of others: 15.46, (13.91), 14.18, 14.63, 14.84, 15.09, 14.96 **[1]** To finish 5th, Ivan must have score between 14.64 and 14.83 OR between 14.63 and 14.84 **[1]** Ivan's second-longest jump is 7.27, so the least and greatest possible lengths for his third jump are 7.37 and 7.56	**3**	Allow one error
4(b)	Other scores are now, in order: 7.82, 7.55, 7.50, 7.45, 7.42, 7.10, 7.02 *1 mark for position corresponding to their greatest in (a)* **ft** (Ivan's best position when his third jump is 7.56 is 2nd)	**1**	

Question	Answer	Marks	Guidance
5(a)	(Jonny catches) 11:42 (bus arriving Newn at 12:07), then 12:15 (train) **[1]** (arriving Ober at 14:35, then 14:45 bus arriving Pato at) 14:55	**2**	
5(b)	(Jonny catches) 16:25 (bus from Ober arriving 16:35) 13:55 (train from Newn) **[1]** (arriving 16:15) 13:12 (bus from Marn arriving 13:37)	**2**	

Question	Answer	Marks	Guidance
6(a)(i)	She needs to discard 10, 18 or 19 OR she needs 1, 9 or 10 but already taken *1 mark for her current total is 59 OR she needs to reduce her total by 9*	**2**	
6(a)(ii)	6, 14, and 20	**1**	
6(b)	4, 6, 8, 14 and 18	**1**	

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Question	Answer	Marks	Guidance
7(a)	Jess scored 1 point in round 1 and 2 points in round 3 Tanya scored 2 points in round 2	**1**	
7(b)	Jess's cards are 1 and 3 and Tanya's are 4 and 5 **[1]** Tanya must win both of the remaining rounds and will score 1 point in one of them and 3 points in the other, taking her total score to 6	**2**	
7(c)	(Tanya currently has 3 points and Jess has 0) Tanya's other cards are 1, 2 and 3 and Jess's other cards are 3, 4 and 5, so either Jess wins all 3 rounds (and wins the game 6–3) **[1]** or one round is drawn and Jess wins other two (the game is drawn 3–3) **[1]**	**2**	

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Question	Answer	Marks	Guidance
8(a)	Greatest time for repairs when 3 bicycles are sold, taking 20 minutes each, so number of minutes available is 540 – (3 × 20) = 480 **[1]** Most repairs when each takes 40 minutes, so number is 480/40 = 12	**2**	
8(b)	10 bicycles sold each taking 30 minutes, leaving 240 minutes for repairs Amount taken in repairs = 240 × \$0.50 = \$120	**1**	
8(c)	10 bicycles sold each taking 20 minutes, leaving 340 minutes for repairs Amount taken = 10 × \$240 + 340 × \$0.50 = \$2400 + \$170 = \$2570 *1 mark for \$2400 OR \$170*	**2**	
8(d)	Oliver worked for 540 minutes, income from repairs = 540 × \$0.40 = \$216, so Stan's income from his repairs = \$406 – \$216 = \$190 **[1]** Stan did repairs for 190/0.5 = 380 minutes **[1]** Stan sold bicycles for 540 – 380 = 160 minutes, so number of bicycles sold = 8	**3**	

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>9(a)</td><td>$216</td><td>1</td><td></td></tr>
<tr><td>9(b)</td><td>108</td><td>1</td><td></td></tr>
<tr><td>9(c)</td><td>Four possibilities for using 46 cups of strawberries:
<table>
<tr><th>12 small</th><th>9 large</th><th>rolls</th><th>cost ($)</th></tr>
<tr><td>1 (6)</td><td>10 (40)</td><td>102</td><td>486</td></tr>
<tr><td>3 (18)</td><td>7 (28)</td><td>99</td><td>423</td></tr>
<tr><td>5 (30)</td><td>4 (16)</td><td>96</td><td>360</td></tr>
<tr><td>7 (42)</td><td>1 (4)</td><td>93</td><td>297</td></tr>
</table>
Only one of these has a cost of $360, and this one makes 96 rolls

1 mark for finding any combination of small and large batches that uses 46 cups of strawberries
1 mark for correct cost calculated for any of these

OR

$3x+5y=360$ and $\frac{1}{2}x+\frac{4}{9}y=46$ [2]
$y=36$ $x=60$
96 rolls</td><td>3</td><td></td></tr>
</table>

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Question	Answer	Marks	Guidance
10	24 *1 mark for two correctly calculated trials* *Algebraic solutions:* $4C = f$ $3(C + 4) = f + 4$ *1 mark for both equations* $C = 8$ *OR* $4C + 4 = 3(C + 4)$ **[1]** $C = 8$	**2**	

Question	Answer	Marks	Guidance
11(a)	7 + 1 + 8 = 16 minutes	**1**	
11(b)	Cleaning will take 5 x 12 x 15 mins or 250 + 250 + 250 + 150 mins **oe [1]** She has to go down to change water when she is on floors 4, 7 and 10 **[1]** She has to go back up to floors 4, 7 and 11 with clean water and down from 12 Altogether, this will take her 3 + 6 + 9 + 11 + 3 + 6 + 10 = 48 minutes **[1]** Plus the 3 minutes for changing water, which is 51 minutes in total. Total time is 951 min = 15 hours 51 minutes.	**4**	Implied by 900 mins or 15 hours Implied by third mark

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Question	Answer	Marks	Guidance
12	If all tickets were sold at full price the total would be 60 × \$30 + 40 × \$50 = \$3800 The total from discounts must therefore be \$310 **[1]** *1 mark for finding any combination of \$3 and \$5 which gives a total of \$310* 38 of the Premium seats were discounted and 40 of the Economy seats were discounted, so the total number of seats that were discounted is 38 + 40 = <u>78</u>	**3**	May see 310 = 3*e* + 5*p*

Question	Answer	Marks	Guidance
13	Rachel played for 26 minutes Yvonne played for 52 minutes Jane played for 42 minutes *2 marks for the correct set of times* *1 mark for any set of three times satisfying the correct relationship* Jane replaced Rachel 26 minutes into the hour Yvonne replaced Jane 60 – 52 = 8 minutes into the hour <u>09:08 and 09:26</u> are the times that the changes happened	**3**	R Y = 2R J = 2R – 10

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