

# THINKING SKILLS

**Paper 9694/11**  
**Problem Solving and Critical Thinking**

<i>Question Number</i>	<i>Key</i>	<i>Question Number</i>	<i>Key</i>
1	<b>C</b>	16	<b>A</b>
2	<b>D</b>	17	<b>A</b>
3	<b>D</b>	18	<b>B</b>
4	<b>C</b>	19	<b>A</b>
5	<b>C</b>	20	<b>A</b>
6	<b>B</b>	21	<b>B</b>
7	<b>A</b>	22	<b>D</b>
8	<b>A</b>	23	<b>C</b>
9	<b>E</b>	24	<b>B</b>
10	<b>B</b>	25	<b>B</b>
11	<b>D</b>	26	<b>E</b>
12	<b>D</b>	27	<b>E</b>
13	<b>B</b>	28	<b>C</b>
14	<b>E</b>	29	<b>A</b>
15	<b>B</b>	30	<b>C</b>

# THINKING SKILLS

**Paper 9694/12**  
**Problem Solving and Critical Thinking**

<i>Question Number</i>	<i>Key</i>	<i>Question Number</i>	<i>Key</i>
1	D	16	E
2	D	17	E
3	B	18	C
4	E	19	A
5	B	20	C
6	A	21	C
7	A	22	D
8	B	23	D
9	A	24	C
10	A	25	C
11	B	26	B
12	D	27	A
13	C	28	A
14	B	29	E
15	B	30	B

# THINKING SKILLS

**Paper 9694/13**  
**Problem Solving and Critical Thinking**

<i>Question Number</i>	<i>Key</i>	<i>Question Number</i>	<i>Key</i>
1	<b>B</b>	16	<b>B</b>
2	<b>D</b>	17	<b>A</b>
3	<b>C</b>	18	<b>A</b>
4	<b>B</b>	19	<b>E</b>
5	<b>B</b>	20	<b>B</b>
6	<b>E</b>	21	<b>D</b>
7	<b>E</b>	22	<b>D</b>
8	<b>C</b>	23	<b>B</b>
9	<b>A</b>	24	<b>E</b>
10	<b>C</b>	25	<b>B</b>
11	<b>C</b>	26	<b>A</b>
12	<b>D</b>	27	<b>A</b>
13	<b>D</b>	28	<b>B</b>
14	<b>C</b>	29	<b>A</b>
15	<b>C</b>	30	<b>A</b>

# THINKING SKILLS

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Paper 9694/21  
Critical Reasoning

## General comments

As in previous sessions, this examination produced a few very good answers but quite a lot of weak responses from candidates who did not appear to understand what the questions expected. Weaknesses of this kind tended to come from whole Centres.

## Comments on specific questions

### Question 1

- (a) This was a harder question than on some previous occasions, and a significant number of candidates gave subjective assessments of Vladimir's personality (such as "*V seems to be a calm person, who would not lie*") instead of discussing the credibility of his evidence. Not many candidates correctly identified Vladimir's vested interest; in fact, some claimed it as a strength that he did not have a vested interest to misrepresent what happened. Many candidates achieved some marks, by referring to corroboration by the paramedic or the security camera. Some candidates discussed issues, such as the absence of fingerprints on Marika's purse, which did not reflect directly on the credibility of Vladimir's evidence.
- (b) This question was done quite well. As shown in the mark scheme, there were several different points which could be made, and many candidates achieved full marks by identifying two or three of them, but not many developed their answers in order to gain the marks that way.
- (c) By far the most popular answer to this question was the evidence of a neutral eye-witness, but not many candidates developed this answer far enough to achieve the full 3 marks. Several candidates rightly suggested that Angus's statement would be useful additional evidence, but most of them assumed that his evidence would be trustworthy, despite the fact that he was facing a charge of manslaughter. Some candidates misunderstood the question, and referred either to some information already given (such as the absence of fingerprints on Marika's purse) or to something counter-factual (such as if the security camera had not been blocked).
- (d) Although this question takes the same format in every session, the conditions vary a lot. Sometimes the kernel of the question consists of disentangling relevant evidence from a mass of information, but on this occasion it was not difficult to select the pieces of evidence which related to the specific question posed. Nearly everyone was convinced that Marika had intended Angus to use violence. The obvious alternative course of events was that she wanted Angus to stand by her, without using violence, but disappointingly few candidates discussed it. Most of the candidates who did consider an alternative chose one which had no support in the evidence, such as that Vladimir punched Bruce. Although most candidates did answer the question, many of their discussions focused mainly on Angus's violent action or included other aspects of the story which did not relate specifically to the question. Very few candidates achieved Level 3.

## Question 2

Some candidates who clearly had some knowledge of psychology were distracted by it through the question.

- (a) As the mark scheme indicates, it was possible to achieve full marks on this question either by identifying several points or by developing one of them. Even so, although very few candidates scored 0, not many achieved the full 3 marks. The most popular answer was the imbalance between the sexes. Quite a lot of candidates claimed that the sample size was too small, which is probably a fair criticism of the research but does not strictly refer to representativeness.
- (b) Many candidates did not understand this question, perhaps because they did not know the word “task” or misread it as “test”. Some repeated or developed their answers from part (a), and a few even answered parts (a) and (b) the wrong way round.
- (c) Most candidates saw the main point of this question – that the research referred to improvement of memory rather than intelligence – but not many achieved the full 3 marks. Marks were awarded to candidates who pointed out that the research identified only average improvements in memory or that the comment was sarcastic. Several candidates, who may have been unaware of the linguistic conventions of blogging, alleged that the writer could not have been good at English because the punctuation of his comment did not follow normal orthography, but this was not credited.
- (d) The best candidates showed by evaluating the evidence that it is possible to agree that doodling improves memory without adhering to any particular explanation of that mildly surprising phenomenon. Only the best answers recognized that the explanation in relation to day-dreaming was not part of the report in Source A, but was mentioned only as a “suggestion” in the newspaper report (Source B). Many candidates appeared to be hampered by the counter-intuitive nature of the claim being discussed and the results of the research.

## Question 3

- (a) Most candidates correctly identified the main conclusion. Since only one mark was available for this question, candidates who included the whole of the sentence, instead of just the first half, were not penalized on this occasion, but teachers and candidates should not assume that this will always be the case.
- (b) Many candidates correctly identified three reasons, but as on previous occasions candidates from a few Centres wrote a paraphrase or précis of the passage instead of laying bare the structure by identifying the reasons used in direct support of the main conclusion.
- (c) A few candidates correctly identified assumptions, flaws (especially generalization on the basis of insufficient evidence) and weaknesses in the reasoning, but – as on previous occasions – many paraphrased the passage, analyzed it or argued against it, instead of evaluating the argument.
- (d) On this occasion, candidates were required to defend a rather counter-intuitive proposition. A significant number of them argued for that proposition surprisingly well, but others lost marks by arguing against it or by defending a variant which they found more persuasive. Some candidates wrote good arguments which were capped at 3 marks because they failed to make the conclusion explicit. Teachers are asked to emphasize to candidates that arguments which do not include an explicit conclusion are incomplete and therefore cannot be awarded full marks. Several candidates offered a collection of unrelated opinions on the topic instead of an argument. Although 3d did not mention reality television, quite a lot of candidates focused their discussions on that subject, either to illustrate the proposition being discussed or – in some cases – as an alternative to it.

# THINKING SKILLS

Paper 9694/22  
Critical Reasoning

## General comments

The examination generated a range of marks and responses and was consistent with previous papers as regards style and difficulty of questions. Candidates need to be aware that many questions require an assessment of both sides of an argument or position (as indicated by expressions such as “how likely....”). Many candidates respond to this type of question by taking up a position on one side and arguing for it, as if they were in a debate.

## Comments on specific questions

### Question 1

- (a) Dinesh Patel makes several claims. Virtually all candidates dealt with one or two of these claims rather than dealing with his statement as a whole. Candidates were able to gain all 3 marks by a thorough assessment of one of these claims. Most candidates looked at the corroboration with the e-mails in Source D and/or Patel’s vested interest. Some candidates talked about the scenario in general rather than Patel’s reliability and this could not be credited as this was not what the question required.
- (b) This was answered well, on the whole. The statement could be seen in two ways; either it was *not* useful because of the lawyer’s vested interest and/or the inconsistency with the e-mails in Source D, or it was useful because it exposed the unreliability of Merchant’s evidence. Either approach was acceptable so long as the judgement was consistent with the justification. A few candidates mistakenly looked at KCI’s lawyers’ statement. Others talked more about the lawyers rather than their statement (especially in looking at vested interest), but this was not penalised.
- (c) Many candidates failed to get 3 marks as they only looked at one side of the question. Most managed to get 2 marks, in some cases more economically than others – lengthy one-sided answers sometimes still only gained 2 marks.
- (d) Many candidates successfully made “critical reference to the evidence” but only a minority had “a consideration of the plausibility of different courses of events”. This capped most at Level 2. As noted in the general comments, this sort of question is not primarily intended to assess candidates’ ability to argue for a position, as if they were a lawyer for the defence or prosecution. It is more a case of being able to arrive at a decision having looked at all possible arguments and scenarios. Within these limitations, many candidates seemed interested in the scenario and made a thorough use of the evidence. A minority got too involved and produced lengthy answers which seemed to make them short of time later in the examination.

### Question 2

- (a) Most candidates did this reasonably well, with many pointing to the possibility of natural disaster, killer disease etc. Weaker answers made the point that one cannot be certain about the future or claimed that the prediction did not take into account death rates. Some of the latter answers did move on to causes of increased death rates, such as natural disasters, and were able to access marks for this part of their answer.
- (b) Balance was needed in this answer to access 3 marks. Only a few candidates picked up on the “if we do not act soon...” part of the quote, which is important in giving the claim some reasonableness. Many answers for 2 marks made the points that there are renewable resources

and that scarcity / rationing through price is more likely than complete disappearance. It could be given for answers that simply re-iterated the point that resources are fast disappearing.

- (c) Again, balance was needed in this question. Many candidates *explained* the analogy rather than assessing its effectiveness which led to some overlap with **Question 2b** in some cases. The best answers suggested that it works quite well for finite resources but is not effective for renewable resources.
- (d) In this question, it is very important that candidates:
- refer closely to the sources;
  - evaluate these sources, rather than just give a summary of what they contain.

Candidates only reaching Level 1 did not do one or both of the above. Some otherwise strong candidates tended to treat the question as an essay title, and did not make any explicit reference to the information in the sources – it is not enough to simply touch upon the themes the sources raise.

Few if any candidates explored whether it was a matter for “world leaders” as such, as opposed to private decisions by individuals without government interference.

### Question 3

- (a) Most candidates successfully identified the main conclusion, though many also included the reason “there are many advantages to having one world language”. Future papers might award 2 marks for this question, in which case candidates who successfully identify the conclusion as such will be rewarded accordingly, with candidates including any other material capped on 1 mark.
- (b) This was done well, on the whole. To get the correct answers here, candidates need to consider which points *directly* support the main conclusion.
- (c) A common mistake in this question is to confuse challenging what is stated with evaluating the reasoning. Simple challenges to the statements will keep the answer in Level 1, and even sustained counter-argument against the reasons will gain no more than 3 marks. These challenges are often expressed as ‘challenging assumptions’ but they cannot be assumptions if they are stated by the author. Candidates should identify things that the author has *not* stated but which are important. For example, the author needs to state that it is a good thing that scientific experiments are not repeated for the reasoning in paragraph 4 to be valid. However, it could be argued that the *repetition* of experiments is a *good* thing and, if English as a shared language *reduces* the amount of repetition, this is actually an argument *against* the idea that “science gains from the use of a shared language”.

Many candidates tried to identify a ‘post hoc’ flaw in the reasoning in paragraph 3 by suggesting there are many reasons why businesses can fail. However, the author is *stating* that businesses fail in Spain because of a lack of Spanish speakers, so all that can be done is to challenge this statement which is not evaluating the *reasoning*. The key evaluative point here is that this example suggests people should learn many different local languages rather than relying on English as a shared language. This undermines the author’s conclusion rather than supporting it.

Neither of the above examples involve challenging whether what the author says is true or false. Rather, they show that, even if the statements are true, they fail to support the author’s conclusion.

One genuine evaluative point that several good candidates did make was that the reasoning supports the need for a universal language rather than English as such. This is particularly notable in paragraph 2, where the reasoning moves from “There are many advantages to a world language” to the conclusion “We should actively promote the use of English”.

- (d) Many candidates produced sustained arguments here, often compensating for rather low marks in part (c). The vast majority did produce arguments to *support* the claim, as requested by the question. Ideally, candidates need to produce distinct lines of reasoning leading to one or more intermediate conclusions, but sustained reasoning without this was able to access 4 out of the 5 marks.

# THINKING SKILLS

Paper 9694/23  
Critical Reasoning

## General comments

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- (c) Many candidates failed to get 3 marks as they only looked at one side of the question. Most managed to get 2 marks, in some cases more economically than others – lengthy one-sided answers sometimes still only gained 2 marks.
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### Question 2

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- (d) Many candidates produced sustained arguments here, often compensating for rather low marks in part (c). The vast majority did produce arguments to *support* the claim, as requested by the question. Ideally, candidates need to produce distinct lines of reasoning leading to one or more intermediate conclusions, but sustained reasoning without this was able to access 4 out of the 5 marks.

# THINKING SKILLS

Paper 9694/41  
Applied Reasoning

## General comments

Overall most candidates have successfully addressed the issue of time management and attempted all questions. Where candidates found themselves struggling on any part of the Problem Solving, they strategically moved away to other questions. Responses to the Problem Solving questions were, on the whole, laid out tidily, giving candidates the best chance of gaining partial credit for working. For Critical Thinking, candidates need to have a good grasp of core skills CT1-11 before they sit this paper. There has been a marked improvement in responses to **Question 3a** (see below). The two areas where there is still much room for improvement are *critical reasoning* and *synthesis*, which comprise the extension skill CT13.

## Comments on specific questions

### **Problem Solving: Questions 1 and 2**

The assessment objectives for both these questions focus not on mathematical abilities but candidates':

- (i) understanding of numerical information,
- (ii) ability to analyse the information,
- (iii) ability to manipulate the information to solve the problem or draw a conclusion.

Candidates should pay attention to the specific detail of the question. For example, each PS question instructs to "study the information" and "show your working". Some candidates did not take on board all the information and so lost marks. For example, **Question 1** specifically states that only multiples of 100 meters should be considered – yet some calculated using 50 meters. **Question 1(b)** asks for the shortest *total* distance, and here some calculated the cycling distance of 1200 correctly, then left off the concluding figure which is the sum of all three distances – 1400. Likewise, **Question 2(c)** asks how many goals *altogether* Pisces scored against Libra, but some candidates lost a mark, having worked out the number of goals from each position, by not adding them together. Some candidates did not show their working to justify their answer, where the question specifically required this, and so lost marks this way. Candidates need to read everything carefully, and it might help to highlight aspects they may otherwise overlook in giving their final solution. For example, in **Question 1(a)**, some candidates got the right answer but did not give the name of the person who would win. Candidates should also remember that where answers are wholly incorrect, they may well be able to collect several marks for demonstrating a good method in the attempt.

### **Question 1**

- (a) The vast majority of candidates were able to calculate the time that Bill and Ben would take to complete the race. Candidates should only round answers when giving a final solution. Unless instructed otherwise (or the nature of the situation dictates otherwise), candidates should use 3 significant figures when giving final answers.
- (b) A substantial number of candidates appreciated that the cycling distance needed to be increased for Ben to have a chance of winning, and used either a trial and error or an algebraic technique to reach the figure of 1200 m (cycling). Many organised their workings to reflect the justification for their final answer and earned full credit.
- (c) This question tests candidates' ability to choose and develop an appropriate model. Candidates who unambiguously gave possible likely combinations were credited fully. Overall this is a skill that needs to be developed with more practice in order to improve candidates' performance.

- (d) This as usual is a complex question which requires the candidate to further develop their skills and use it to arrive at the required solution. Overall, candidates performed better on this question compared to last session. Although the question implies that candidates should investigate swimming lengths, many stuck to the swimming lengths of 100 metres, but still earned credit. Some were able to come up with a suboptimal solution.

### Question 2

- (a) A popular incorrect answer was 14, although many others did get the correct answer 7.
- (b) This question required data processing and finding procedures to arrive at the solution. Several candidates headed for the algebraic method and came up with the fully correct solution. Those who did not get the correct solution, but gave an algebraic equation which at least represented the situation, earned mitigated credit. Overall, candidates appeared to find this task quite challenging, and many gave the incorrect answer 32.
- (c) A substantial number of candidates drew the correct conclusion here. However, a fair number included Leo incorrectly.
- (d) Almost all candidates were able to do a search that came up with a proposal for two or one valid line-ups, which, even if not wholly accurate, earned them at least one mark. A very few responses proposed line-ups only by classification points and not individuals' names. These did not access any credit, as the coach has to select players, not classification points.

### Question 3

Overall there is evidence that lapses identified in previous sessions are being addressed. Candidates are tackling the question with better understanding of what is required in a Critical Thinking question of this level. There are still a fair number of candidates who approach Critical Thinking stimulus passages as they would a question on literature. It is of fundamental importance that candidates do not confuse Critical Thinking with Literary Criticism. What is looked for is the accuracy with which candidates can apply relevant CT skills from CT1-12 in **Questions 3a** and **3b**, and how well they extend these skills to constructing a reasoned case (CT13) in **Question 3c**. The best answers were characterised by precision and clarity.

- (a) There was a marked improvement in performance generally. More candidates identified the structure of the argument clearly, and labelled the component parts with the technical terms such as 'main conclusion', 'counter-argument' and 'intermediate conclusion'. When identifying the main conclusion or reasons, candidates should complete the sentences and include the key phrases or significant words. For example, candidates who identified the main conclusion as "*Singaporeans should make it a rule to speak English well*" would not have accessed the credit, as the argument is not about whether they should speak English well, but whether they should speak it well *in every context*. Similarly candidates who wrote the main conclusion as "*Singaporeans should speak English in every context*" did not access the mark/s as the argument is not just about speaking English in every context, but speaking it *well*, or about (equivalent paraphrase) speaking Standard English or Good English. Literary evaluations such as "*the structure of the document is very formal*" or "*the language is concise and clear*" could earn no mark, as this is not doing Critical Thinking as described in the syllabus.
- (b) Overall candidates performed better than during the last session on this question also. Concerted efforts were made to find implicit assumptions. There was also clear, emerging recognition that the task is one of identifying flaws and explaining strengths and weaknesses, rather than making counter-assertions or merely challenging claims in the stimulus passage. The best answers showed a clear identification of the main weaknesses in the passage, which were then explained clearly by applying Critical Thinking criteria from CT1-9. Candidates need to be specific and precise about discerning flaws such as circularity, contradiction, straw man etc. Technical terminology is not required, but if used it should be correct. Responses simply re-stating what is already in the stimulus passage, instead of finding and explaining unstated assumptions, could not be credited. For example, "*KTA assumes that one must speak grammatically correct English to be understood outside of Singapore, Malaysia and Batam*" – unless a clear explanation is given showing that this works as an unstated assumption, it does no more than repeat what is in the text. An overall evaluation, if stated, can be credited only if the analysis of each weakness / strength supports a clear concluding judgment on whether, on the whole, the target argument is weak, strong, overdrawn or sound / balanced etc.

- (c) The best responses demonstrated the higher-order skill of critical reasoning, i.e. candidates critically compare and contrast material from a range of given stimulus sources and draw inferences which could support one's own ideas and claims. These responses also showed evidence that they expected some challenges to their own position, and expressed a clear conclusion. Candidates who could only extract and assess evidence from a source in isolation (without engaging in analysis and synthesis through comparing and contrasting material between sources) did not score any higher than the upper-middle band (10–13 marks). There were several candidates who ignored or barely made reference to the source documents, but went on to construct inspired and creative arguments. Such answers were restricted to the lower band of marks. This is because the skill of selecting, interpreting / analysing and combining information from the source documents had not been demonstrated. Candidates need to keep within the scope provided by the source documents and construct a body of interpretation or reasoning. On this base they can add further evidence / arguments from their own ideas or knowledge, thus building a well-reasoned case supporting a clearly expressed conclusion.

Candidates who made a good argument but did not give a clear conclusion, or only implied a conclusion, were restricted to scoring mid-way on the middle band.

As in previous sessions, it remains the case that very few candidates anticipated counter-arguments to their own viewpoints or reasoned case. Evidence of this ability is required for access to the uppermost marks band. This is a complex and sophisticated extension skill that can come with practice. One way to do this might be for candidates to construct an argument, and then predict what plausible counter-claims could challenge it, and how these would impact on the argument.

# THINKING SKILLS

Paper 9694/42  
Applied Reasoning

## General comments

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## Comments on specific questions

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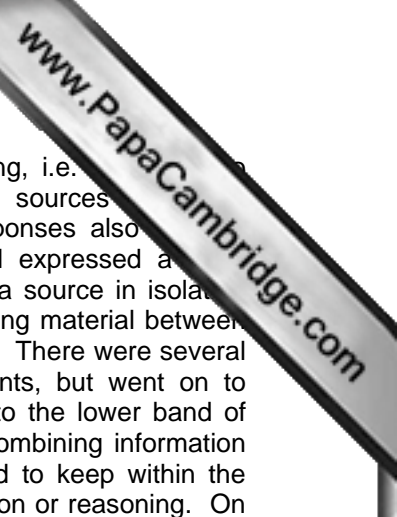
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- (b) Overall candidates performed better than during the last session on this question also. Concerted efforts were made to find implicit assumptions. There was also clear, emerging recognition that the task is one of identifying flaws and explaining strengths and weaknesses, rather than making counter-assertions or merely challenging claims in the stimulus passage. The best answers showed a clear identification of the main weaknesses in the passage, which were then explained clearly by applying Critical Thinking criteria from CT1-9. Candidates need to be specific and precise about discerning flaws such as circularity, contradiction, straw man etc. Technical terminology is not required, but if used it should be correct. Responses simply re-stating what is already in the stimulus passage, instead of finding and explaining unstated assumptions, could not be credited. For example, "*KTA assumes that one must speak grammatically correct English to be understood outside of Singapore, Malaysia and Batam*" – unless a clear explanation is given showing that this works as an unstated assumption, it does no more than repeat what is in the text. An overall evaluation, if stated, can be credited only if the analysis of each weakness / strength supports a clear concluding judgment on whether, on the whole, the target argument is weak, strong, overdrawn or sound / balanced etc.



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# THINKING SKILLS

Paper 9694/43  
Applied Reasoning

## General comments

Overall most candidates have successfully addressed the issue of time management and attempted all questions. Where candidates found themselves struggling on any part of the Problem Solving, they strategically moved away to other questions. Responses to the Problem Solving questions were, on the whole, laid out tidily, giving candidates the best chance of gaining partial credit for working. For Critical Thinking, candidates need to have a good grasp of core skills CT1-11 before they sit this paper. There has been a marked improvement in responses to **Question 3a** (see below). The two areas where there is still much room for improvement are *critical reasoning* and *synthesis*, which comprise the extension skill CT13.

## Comments on specific questions

### **Problem Solving: Questions 1 and 2**

The assessment objectives for both these questions focus not on mathematical abilities but candidates':

- (i) understanding of numerical information,
- (ii) ability to analyse the information,
- (iii) ability to manipulate the information to solve the problem or draw a conclusion.

Candidates should pay attention to the specific detail of the question. For example, each PS question instructs to "study the information" and "show your working". Some candidates did not take on board all the information and so lost marks. For example, **Question 1** specifically states that only multiples of 100 meters should be considered – yet some calculated using 50 meters. **Question 1(b)** asks for the shortest *total* distance, and here some calculated the cycling distance of 1200 correctly, then left off the concluding figure which is the sum of all three distances – 1400. Likewise, **Question 2(c)** asks how many goals *altogether* Pisces scored against Libra, but some candidates lost a mark, having worked out the number of goals from each position, by not adding them together. Some candidates did not show their working to justify their answer, where the question specifically required this, and so lost marks this way. Candidates need to read everything carefully, and it might help to highlight aspects they may otherwise overlook in giving their final solution. For example, in **Question 1(a)**, some candidates got the right answer but did not give the name of the person who would win. Candidates should also remember that where answers are wholly incorrect, they may well be able to collect several marks for demonstrating a good method in the attempt.

### **Question 1**

- (a) The vast majority of candidates were able to calculate the time that Bill and Ben would take to complete the race. Candidates should only round answers when giving a final solution. Unless instructed otherwise (or the nature of the situation dictates otherwise), candidates should use 3 significant figures when giving final answers.
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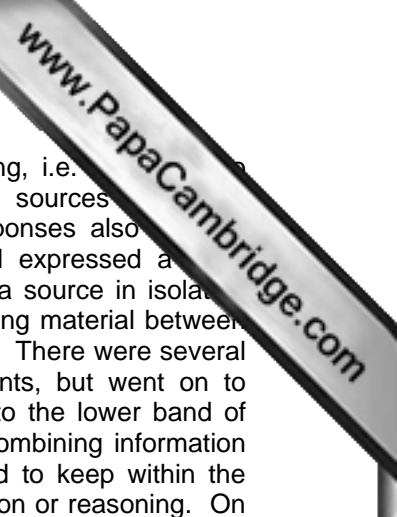
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