

1. Joseph is an author and programmer, and he needs to estimate how many pages his new book will have.

Each page has an average of 300 words. Each chapter starts with a chapter title page. The number of pages is estimated by;

- dividing the number of words by 300
- ignoring the decimal part of the division
- adding the number of chapters to this total.

Joseph uses the algorithm below to estimate the number of pages, but his algorithm does not give the correct result.

```
01 INPUT numberOfWords
02 INPUT numberOfChapters
03 CONST wordsPerPage = 300
04 numberOfPages = RoundDown(numberOfWords / wordsPerPage)
05 numberOfPages = numberOfWords + numberOfChapters
06 OUTPUT numberOfPages
```

Joseph has used a `RoundDown` function to remove the decimal part of the division, e.g. `RoundDown(6.2)` would return 6, `RoundDown(7.8)` would return 7.

There is an error in line 05 of the algorithm.

Write a corrected line of code to replace line 05.

[1]

2. Charley is writing a program for music students. To make sure that there are no logic errors in the program, Charley uses a test plan.

Describe what is meant by a logic error.

[2]

END OF QUESTION paper

Mark scheme

Question			Answer/Indicative content	Marks	Guidance
1			$\text{numberOfPages} = \text{numberOfPages} + \text{numberOfChapters}$	1	<p>Accept:</p> <ul style="list-style-type: none"> • $+=$ instead of $=$ numberOfPages • $\text{numberOfPages} = \text{RoundDown}(\text{numberOfWords} / \text{wordsPerPage}) + \text{numberOfChapters}$ • $\text{numberOfPages} = \text{RoundDown}(\text{numberOfWords} / 300) + \text{numberOfChapters}$ <p>Variable names must be spelt correctly, ignore case</p> <p>Examiner's Comments</p> <p>This question was appropriate programming theory and techniques.</p> <p>There was a mix of responses to this question, many candidates were able to get this correct, whilst others were unable to follow the code.</p>
			Total	1	
2			<ul style="list-style-type: none"> • The error does not prevent program running... • But it does not produce the expected output / it does not do what the programmer intended • A reasonable example 	2	<p>Examiner's Comments</p> <p>Candidates who had learnt a definition for logic error were able to answer this more clearly and succinctly than candidates who were attempting to put it in their own words, often confusing the use of the term "logic" here with the everyday use of the term and giving answers such as "it doesn't make sense".</p>
			Total	2	