

1 A user requires a program that implements complex data encryption to a recognised international standard. A programmer has started the design of the program.

- (a) The programmer decides to use a library routine to provide part of the solution. One reason for this is that library routines may perform functions that the programmer is unable to program themselves.

State **three** other benefits of using library routines in the development of the program.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

- (b) The programmer has identified a different part of the algorithm that would be appropriate to implement as a subroutine (a procedure or a function); no suitable library routine exists for this part.

(i) State **two** reasons why the programmer may decide to use a subroutine.

1 .....

.....

2 .....

.....

[2]

(ii) A function header in pseudocode is defined as:

```
FUNCTION Pass2 (Count : INTEGER) RETURNS BOOLEAN
```

Complete the table by describing the terms used in the function header.

The first row has been completed.

Term	Description
Pass2	the name of the function
Count	
BOOLEAN	

[2]

(c) Variables in the program have example values:

Variable	Example value
DoB	23/6/2011
Multiplier	2.5
AddressLine[1]	"35 Lincoln Avenue"

Complete the table by evaluating each expression using the example values:

Expression	Evaluates to
LENGTH(NUM_TO_STR(Multiplier))	
MONTH(DoB) > 4	
15 + STR_TO_NUM(MID(AddressLine[1], 2, 1))	

[3]