Name: Class:

Task 1

(a) How many parameters does procedure **printInfo** have?

SUBROUTINE printInfo(firstname, surname, age)

fullName ← firstname + " " + surname  
 years ← age + " years old."  
 OUTPUT fullName  
 OUTPUT years

ENDSUBROUTINE

(b) What will be printed by the following call to the procedure?

CALL printInfo("Scooby", "Doo", 52)

Task 2

(a) There are two types of subroutine – functions and procedures. Complete the table below by ticking whether each feature is available in functions and/or procedures.

|  |  |  |
| --- | --- | --- |
| **Features of subroutines** | **Functions** | **Procedures** |
| Have a subroutine name which is used to call the subroutine |  |  |
| Take zero, one or many parameters which are used to pass values to the subroutine |  |  |
| Return a value back to the calling subroutine |  |  |
| The subroutine can be called several times in the same program |  |  |

(b) Write a function called **answerYorN** to input and check the response to a question. It should be “y” or “n”. Any other response is invalid, and the function should ask the user to re-enter until a valid response is received. The function will then return “y” or “n” when a valid response is received.

The function is called as follows:

response ← answerYorN()

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Task 3

Write a function called addIntegers which takes two integers, a and b, as parameters. The function needs to add up all the numbers between a and b and return the result.

For example addIntegers(5,10) will return 45

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Task 4

1. (a) What is printed out when the following program is run?

FUNCTION calculateTotal(prices : REAL) RETURNS REAL

total ← 0

FOR i ← 1 TO LENGTH(prices)

total ← total + prices[i]

NEXT i

RETURN total

ENDSUBROUTINE

itemPrices ← [2.00, 2.50, 1.00, 1.00, 1.00]

totalPrice ← calculatePrice(itemPrices)

OUTPUT totalPrice

(b) Name two local variables used inside the calculateTotal function. What is the **scope** of each of these variables?

2. Examine the following pseudocode.

FUNCTION triangle(base : REAL, height : REAL) RETURNS REAL

halfBase ← base / 2

area ← halfbase \* height

ENDSUBROUTINE

//main program

area ← triangle(8, 10)

OUTPUT area

The pseudocode contains an error.

Find the error and write a line of code to fix it.