Name: Class:

**Task 1**

1. Examine the pseudocode program given below.

(a) Which lines show an example of a sequence?

(b) Which lines show an example of the ‘Selection’ programming construct?

(c) There are two examples of iteration statements in the program. On which lines do each of the ‘Iteration’ programming construct begin and end?

(d) If the user enters 1 and 10 for the lowNumber and highNumber, what will be printed out at line 14?

1. print("This program prints selected numbers in a given range")
2. anotherGo = "Y"
3. while anotherGo == "Y"
4. lowNumber = int(input("Please enter first number in your
 chosen range: "))
5. highNumber = int(input("Please enter last number in your
 chosen range: "))
6. totalNum = 0
7. for i = lowNumber to highNumber
8. if i MOD 5 != 0 and i MOD 7 != 0
9. print(i)
10. totalNum = totalNum + 1
11. endif
12. next i
13. print(totalNum)
14. answer = input("Another go? (Y or N)")
15. anotherGo = answer.upper()
16. endwhile

Task 2

1. Write a pseudocode algorithm which inputs numeric scores and outputs how many of them are over 100. The end of the data is signalled by a user input of -1.

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2. Write a pseudocode algorithm which inputs numeric scores and outputs the average score. The end of the data is signalled by a user input of -1.

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Task 3

A floor turtle uses these instructions.

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| **Instruction** | **Meaning** |
| forward(n) | Move *n* cm forward |
| backward(n) | Move *n* cm backwards |
| left(d) | Turn left *d* degrees |
| right(d) | Turn right*d* degrees |
| penup() | Raise the pen |
| pendown() | Lower the pen |

(Each square in the drawing is 10cm by 10cm.)

(a) Complete the set of instructions to draw the shape shown below in bold lines, starting at the point marked X.

|  |  |  |
| --- | --- | --- |
| **X** |  |  |
|  |  |

 pendown()
for i = 1 to 4

|  |
| --- |
|   |

(b) Complete the set of instructions to draw the shape shown below in bold lines, starting at the point marked X.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** |  |  |  |  |  |  |  |  |
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 pendown()
for i = 1 to 3
 for j = 1 to 4

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(c) Complete the set of instructions to draw the shape shown above in bold lines, starting at the point marked X.

pendown()

distance = 10

for i = 1 to 7

endfor

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| --- | --- | --- | --- | --- | --- | --- |
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|  |  |  | X |  |  |  |
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Task 4

An email address must contain an ‘@’ symbol. Write a program in pseudocode that will:

* ask a user to enter their email address
* if they enter an email address without an @ symbol it will ask them to enter it again
* to check if the email address contains an @ symbol, a for loop should be used to check each character entered
* a do…unit loop must be used as part of the program

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