

**NAME** : \_\_\_\_\_  
**STUDENT NO.** : \_\_\_\_\_  
**GROUP** : \_\_\_\_\_

### Question 1

Define an algorithm.

An algorithm is a step-by-step sequence of precise instructions that must terminate and describe how the data is to be processed to produce the desired output. The instructions may be expressed in a human language.

### Question 2

Define a flowchart.

Use standardized symbols to show the steps the computer needs to take to accomplish the program's objective.

### Question 3

Define a pseudocode.

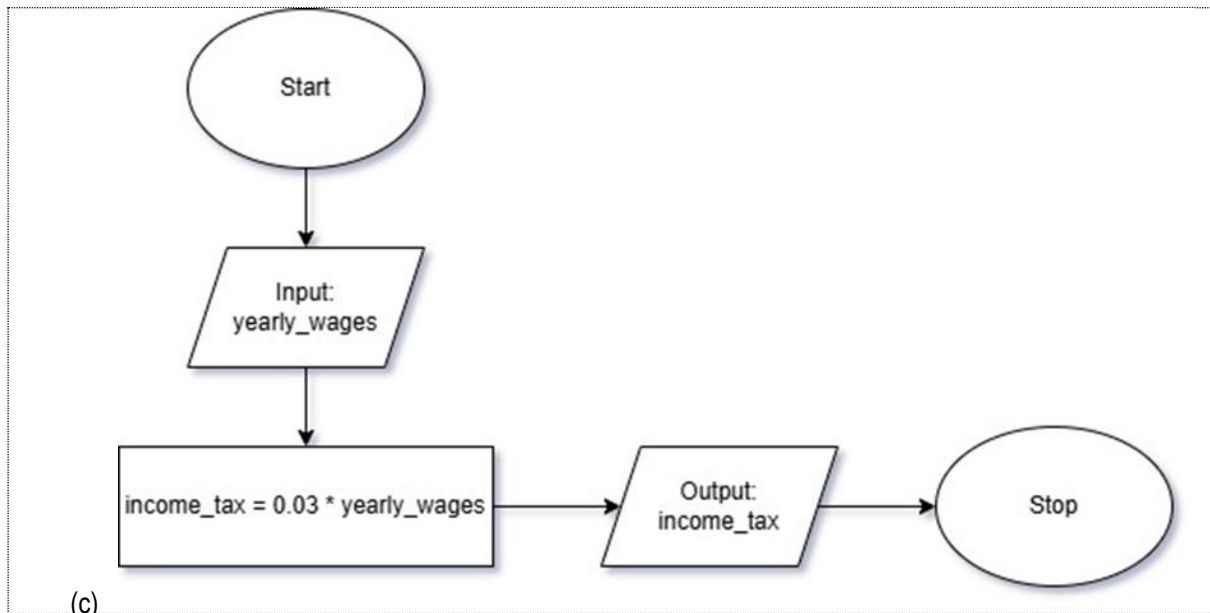
Use English-like phrases to describe the processing process. It is not standardized since every programmer has his or her own way of planning the algorithm.

### Question 4

Ammar lives in Shah Alam that charges 3% income tax on yearly wages. He wants you to write a program that will display the income tax.

- (a) Identify the input, process and output for the program.
- (b) Write a pseudocode for the program.
- (c) Draw a flowchart for the program.

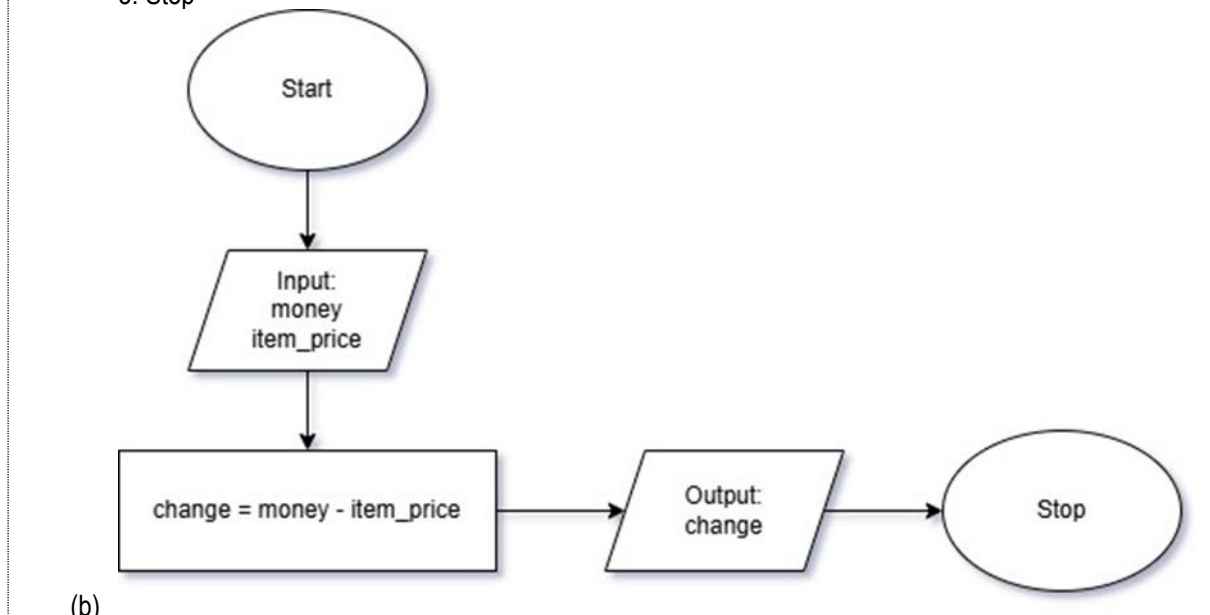
- (a) Input: Yearly Wages  
Process:  $\text{Income Tax} = 0.03 * \text{Yearly Wages}$   
Output: Income Tax
- (b) 1. Start  
2. Read: Yearly Wages  
3. Calculate:  $\text{Income Tax} = 0.03 * \text{Yearly Wages}$   
4. Write: Income Tax  
5. Stop



### Question 5

- (a) Write a pseudocode to calculate the change given back to the customer for the price of item bought at the supermarket.  
(b) Draw a flowchart based on problem in (a).

- (a) 1. Start  
2. Read: Item Price, Money  
3. Calculate: Change = Money - Item Price  
4. Write: Change  
5. Stop



### Question 6

Task:

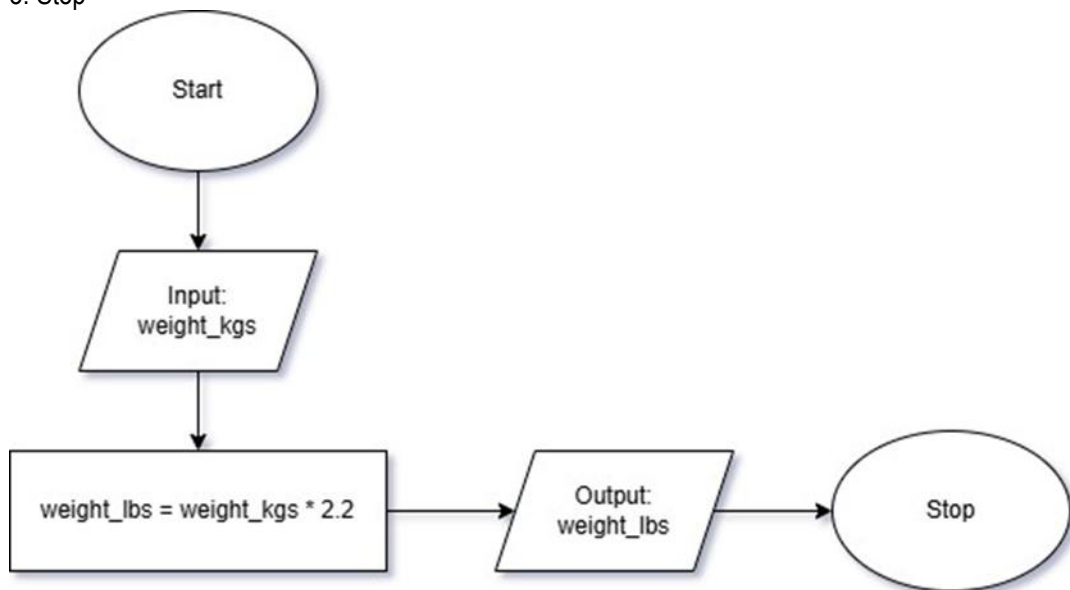
Convert weight in kilograms to its equivalent unit in pound and display it.

Hint:

1 kg = 2.2 lbs

- (a) Define the input, process and output of this task.
- (b) Write a pseudocode of this task.
- (c) Draw a flowchart of this task.

- (a) Input: Weights in kilograms  
Process: Weight in pounds = Weight in kilograms \* 2.2  
Output: Weight in pounds
- (b) 1. Start  
2. Read: weight\_kgs  
3. Calculate: weight\_lbs = weight\_kgs \* 2.2  
4. Write: weight\_lbs  
5. Stop



(c)

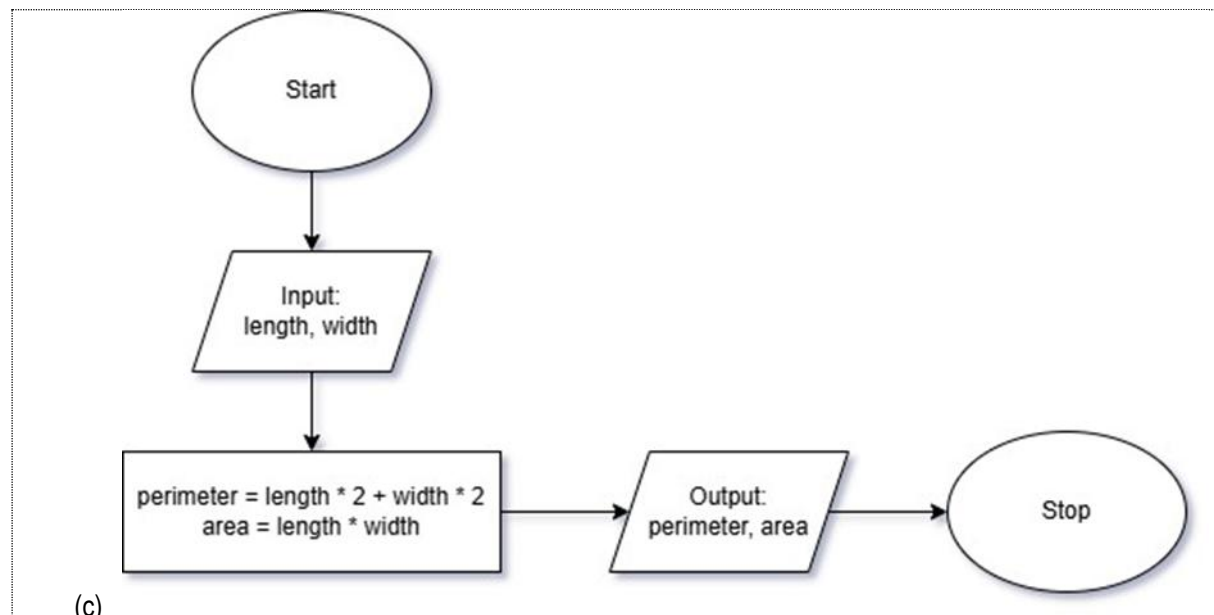
### Question 7

Task:

Calculate the perimeter and area of a rectangle. Then, display the perimeter and area of a rectangle.

- (a) Define the input, process and output of this task.
- (b) Write a pseudocode of this task.
- (c) Draw a flowchart of this task.

- (a) Input: Length, Width  
Process: Perimeter = Length \* 2 + Width \* 2, Area = Length \* Width  
Output: Perimeter, Area
- (b) 1. Start  
2. Read: length, width  
3. Calculate: perimeter = length \* 2 + width \* 2, area = length \* width  
4. Write: perimeter, area  
5. Stop



### Question 8

Task:

Calculate and display an average salary of three employees.

- (a) Define the input, process and output of this task.
- (b) Write a pseudocode of this task.
- (c) Draw a flowchart of this task.

- (a) Input: Salary of three employees  
 Process: Average salary of three employees = (Sum of the salary of the three employees) / 3  
 Output: Average salary of three employees
- (b) 1. Start  
 2. Read: salary1, salary2, salary3  
 3. Calculate:  $\text{avg} = (\text{salary1} + \text{salary2} + \text{salary3}) / 3$   
 4. Write: avg  
 5. Stop

