# Worksheet 1 Programming Basics

**Task 1**

1. Write an algorithm that will calculate the amount of paint required to paint a room. The user will enter the dimensions of the room, the dimensions of each unpaintable area (such as windows, doors or brickwork) and the number of coats of paint required. Assume that 1 litre of paint covers 11 sq m.

 You can get some handy tips from the site below:

 <https://www.dulux.co.uk/en/decorating-tips-and-advice/how-to-calculate-the-right-amount-of-paint>

**Task 2**

2. Rewrite your algorithm using more formal pseudocode.

 If possible, code the program and test it.

3. Write pseudocode for a program which calculates the number of miles per gallon a car is doing. The user will input

* the car mileage the last time the car was filled
* the car mileage now
* the total number of litres taken to fill the tank

 n.b. There are 0.22 gallons in a litre, or 4.546 litres in a gallon

 Which of the identifiers in your program could you define as

 (i) a constant? (What is the advantage of doing this?)

 (ii) an integer

 (iii) a real (decimal) number?

**Task 3**

4. Write an algorithm using pseudocode that asks the user to input the number of students and the number of books to be equally divided between them. Calculate and output the number of books that each student will receive and the number left over.

5. Write pseudocode for an algorithm that prompts the user to enter a name, uses a string function to find its length and then tells the user how long the name is.