

Worksheet: Review, Part 3

1. Given the following pseudocode, draw the corresponding flowcharts. The flowchart must not only produce the correct answer, it must follow the exact same algorithm.

```
// Main Program  
RECEIVE n FROM keyboard  
SET value TO factorial(n)  
SEND value TO DISPLAY
```

```
FUNCTION factorial(limit)  
BEGIN FUNCTION  
    SET ans TO 1  
    SET i TO 1  
  
    REPEAT  
        SET ans TO ans * i  
        SET i TO i + 1  
    UNTIL i > limit  
  
    RETURN ans  
END FUNCTION
```

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2. Give the flowchart and pseudocode for an algorithm that inputs a number from the user, then calls a subprocess, called `sum`, that calculates the sum of all numbers from zero up to and including that number, and finally outputs the resulting sum. Show the flowchart and pseudocode for both the main process and the subprocess. Consider whether your loop will use a `WHILE` or a `REPEAT` statement. You can assume the user enters a whole number (no validation of input required).