Write down the trace tables corresponding to the following algorithms, expressed in pseudocode.

1. Trace the following algorithm with the following inputs:
   1,2,3; 3,2,1 and 2,3,1

```
program LargestOf3
   output "Enter 3 numbers "
   intput X, Y, Z
   LARGEST = X
   if Y > LARGEST then
          LARGEST = Y
   if Z > LARGEST then
          LARGEST = Z
   end if
   output "The largest number is ", LARGEST
end program
```

2. Trace the following algorithm with the following input:
   1,2,3,4,5,0 (zero)

```
program Sum
   TOTAL = 0
   loop
          input NUMBER
          if NUMBER != 0 then
                 TOTAL = TOTAL + NUMBER
   while NUMBER != 0
   output "Total is ", TOTAL
end program
```

Extra challenge #1 (optional): Modify or rewrite algorithm #1 to find the largest number in any amount of numbers? Hint: you need a while loop with 0 (zero) as your rogue or exit value.

3. Trace the following algorithm with the following inputs:
   5; 1,2,3,4,5

```
program CalculateAverage
   TOTAL = 0
   COUNTER = 0
   output "How many numbers to average? "
   input HOWMANY
   loop while COUNTER < HOWMANY
          output COUNTER, "-Enter number "
          input NUMBER
          TOTAL = TOTAL + NUMBER
          COUNTER = COUNTER + 1
   end loop
   AVERAGE = TOTAL / COUNTER
   output "The average of the numbers you entered is ", AVERAGE
end number
```

Extra challenge #2 (optional): Re-write/modify the following algorithm to calculate OFS grades based on our HS Computer Technology OFS grade boundaries, as published in our online resources

```
program GradeCalculator
   output "What is your score for MYP criterion A= "
   input A
   output "What is your score for MYP criterion B= "
   input B
   output "What is your score for MYP criterion C= "
   input C
   output "What is your score for MYP criterion D= "
   input D
   TOTAL = A+B+C+D
   if TOTAL > 32 or TOTAL < 0 then
          output "Error in criteria input."
          end program
   end if
   if TOTAL > 27 then
          output "You got a 7"
   else if TOTAL > 23 then
          output "You got a 6"
   else if TOTAL > 18 then
          output "You got a 5"
   else if TOTAL > 14 then
          output "You got a 4"
   else if TOTAL > 9 then
          output "You got a 3"
   else if TOTAL > 5 then
          output "You got a 2"
   else
          output "You got a 1"
   end if
end program
```