7.1.1

a. ***Input:*** *$a_1, a_2, \ldots, a_n$, a sequence of numbers, where $n \geq 1$. n, the length of the sequence.*

Output: *"True" if the sequence is non-decreasing and "False" otherwise.*

(A sequence of numbers is non-decreasing if each number is at least as large as the one before.)

```
nonDecreasing := true
For i = 2 to n
  If (nonDecreasing && a[i-1] > a[i]), nonDecreasing := false
End-for
Return (nonDecreasing)
```

b. ***Input:*** *$a_1, a_2, \ldots, a_n$, a sequence of numbers, where $n \geq 1$. n, the length of the sequence.*

Output: *"True" if there are two consecutive numbers in the sequence that are the same and "False" otherwise.*

```
sameConsecutive := false
For i = 2 to n
  If (!sameConsecutive && a[i-1] = a[i]), sameConsecutive := true
End-for
Return (sameConsecutive)
```

c. ***Input:*** *$a_1, a_2, \ldots, a_n$, a sequence of numbers, where $n \geq 1$. n, the length of the sequence.*

Output: *"True" if there are any two numbers in the sequence whose sum is 0 and "False" otherwise.*

```
zeroSum := false
For i = 2 to n
  If (!zeroSum && a[i-1] + a[i] = 0) zeroSum := true
```