Question 1

Not yet answered

Marked out of 10.00

Consider a data matrix `m` with elements as depicted:

12	24	16	31	29	17
9	25	28	19	32	34
11	30	8	6	14	33
27	35	10	22	15	20
23	21	18	13	26	7

Now have a look at the given R code

```
# initialisation of result vector `x`
x <- NULL

# outer loop
for(j in 1:nrow(m)){
  k <- 1
  x[j] <- m[j, k]

  # inner loop
  while(k < ncol(m)){
    # check condition
    if(x[j] > m[j, k + 1]) {
      x[j] <- m[j, k + 1]
    }
    k <- k + 1
  }
}
```

and answer the following questions:

a. How many iterations will be performed by the outer loop? ____

b. What is the value of the loop variable `j` **after** running the given code? ____

c. How many iterations will be performed by the inner loop? ____

d. What is the value of the variable `k` **before** running the inner loop? ____

e. Consider the 4th iteration of the outer loop, i.e. `j = 4`. Which value is assigned to the 4th position of `x` via `x[j] <- m[j, k]` **before** running the inner loop.? ____

f. Consider again the 4th iteration of the outer loop, i.e. `j = 4`. For which iteration of the inner loop, i.e. which value of `k` is the condition of the `if`-clause, checked via `x[j] > m[j, k + 1]`, `TRUE` for the **first** time? ____

g. Now consider the code to be run completely. What ist the last element of vector `x` ____

h.
- ○ The code determines the minimum value in each row of matrix `m`.
- ○ The code determines the maximum value in each row of matrix `m`.
- ○ The code determines the minimum value in each column of matrix `m`.
- ○ The code determines the maximum value in each column of matrix `m`.
- ○ None of the above.