

The exam answer.

Exercise #1

A1: the "do.... while" loop forces the user to read an integer value greater than or equal to 10 (integer of at least three digits) **01pts**

A2 : Execution

a. Values of Variables **01,25 pts**

A	c	N	x	Observations
3	0	95633	95633	befor loop
	1		9563	1 st iteration
	2		956	2 nd iteration
	3		95	3 rd iteration
	4		9	4 th iteration

b. The execution screen **0,25pts**

```
enter a positive integer: 95633
LLLL
```

b. Values of Variables **1pts**

A	c	N	x	Observations
7	0	7187	7187	befor loop
	1		718	1 st iteration
	2		71	2 nd iteration
	3		7	3 rd iteration

b. The execution screen **0,25pts**

```
enter a positive integer: 7187
BBBB
```

A3: if the first and last digits are different the algorithm displays LLLL.

if the first and last digits are equal the algorithm displays BBBB **1pts**

A4:

```
#include <stdio.h>
int main()
{
    int a,c,n,x;
    printf("enter a positive integer : ");
    do
    scanf("%d",&n);
    while( x<10);
    a = a %10;
    x=n;
    c=0;
    while (x>=10)
    {
        x← x / 10;
        c ← c+1;
    }
    if (a==x)
        printf("BBBB ");
    else
        printf("LLLL ");
}
```

4pts

(-0.25 for each fault)

A5/ The variable c can be the number of digits of n (either initialize c to 1 or display c+1 to give the number of digits of c) **1,25pts**

Exercise #2

Algorithm exam

Var

a, b, i :integer

0,5

Begin

write (" enter 2 positive integers: ")

read(a,b)

0,5

for i ←1 to a do

1

if (a mod i = 0 and b mod i = 0) then	1,5
write (i)	0,5
endif	
End for	
End	

Exercise #3

Algorithm matrix

Var

i, j ,R,C sum, x:integer

A: array [10][10] of integer

01pts

Begin

write("enter number of rows and number of columns : ")

read(R,C)

0,5pts

for i ← 0 to R-1 do

for j ← 0 to C-1 do

read(A[i][j])

1pts

endfor

endfor

write("enter a positif number < C :")

read (x)

0,5

sum ← 0

0,5

for i ← 0 to R-1 do

sum ← sum + A[i][x]

1pts

endfor

1pts

write ("sum of the row" , x , "is : ", sum)

0,5

End