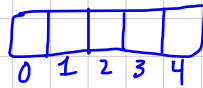
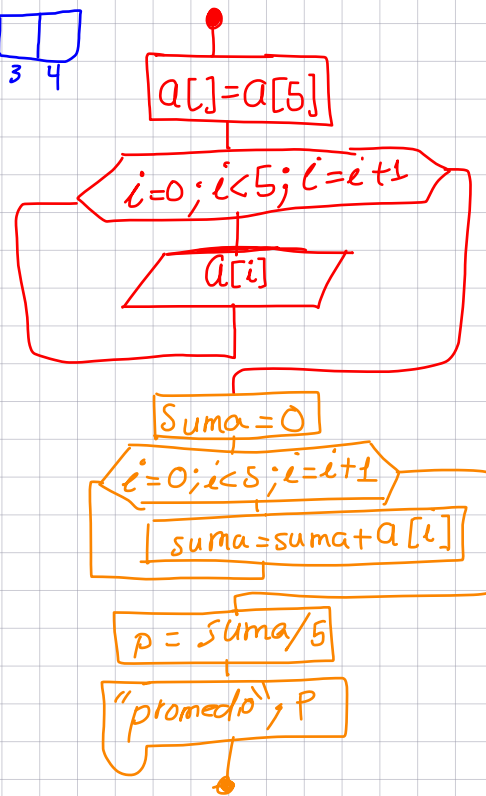


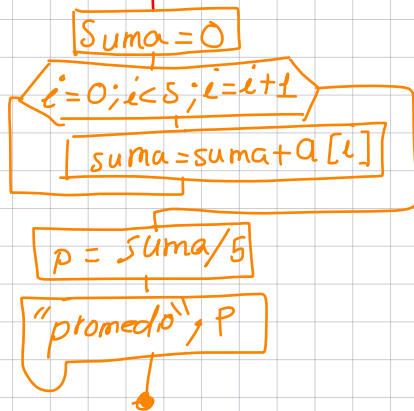
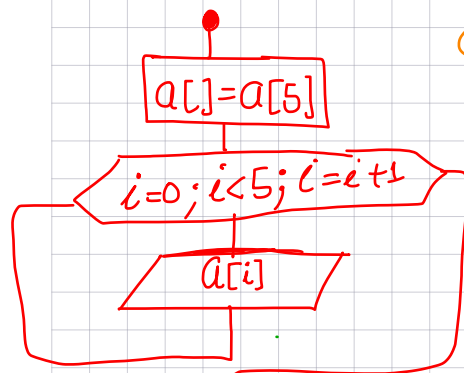
$a[] = q[5]$



Promedio?
$$\frac{\sum_{i=0}^n a_i}{n}$$



i
0
1
2
3
4



9 \Rightarrow

8	9	3	7	11
---	---	---	---	----

0 1 2 3 4

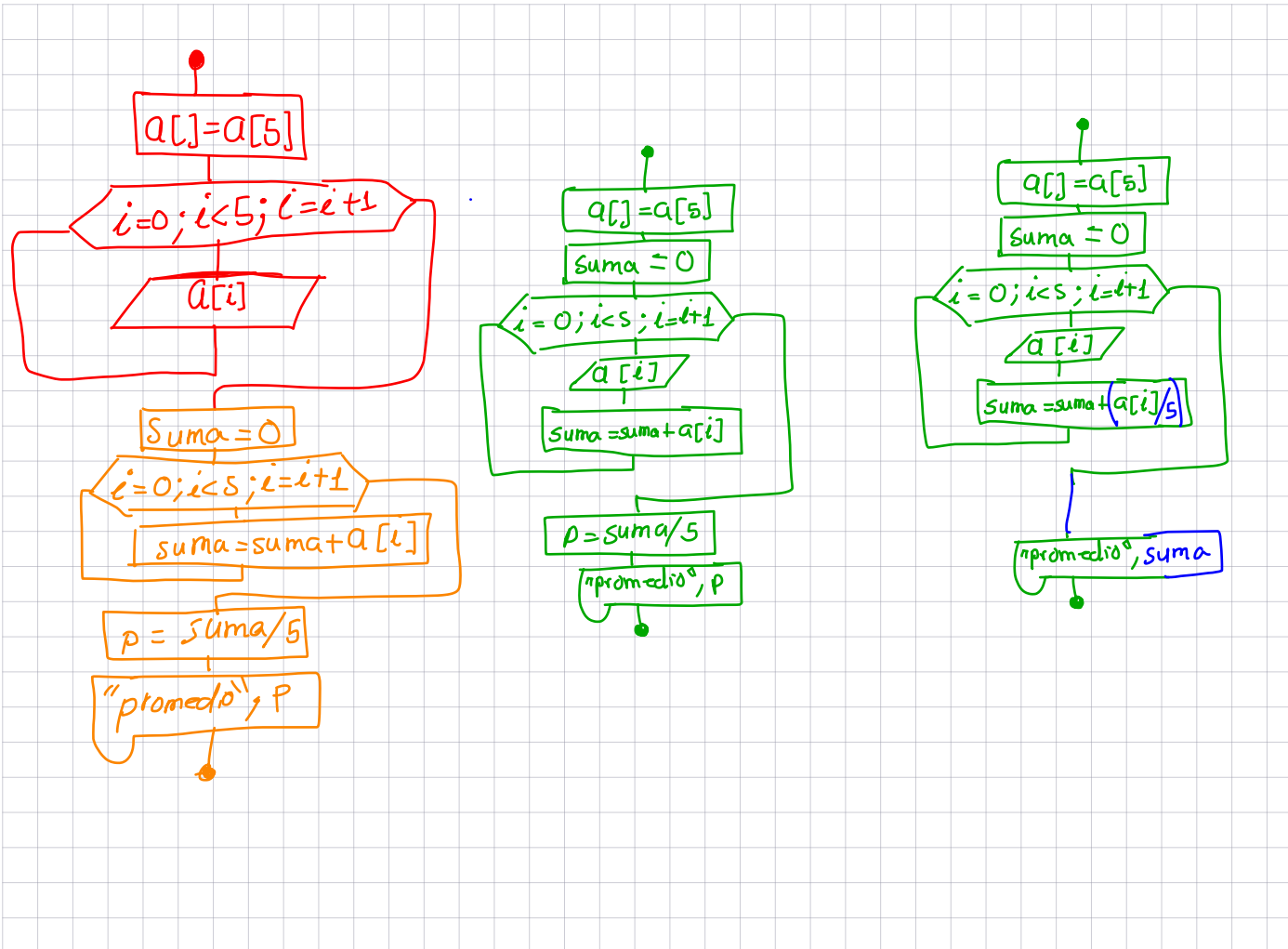
almacenar toda la información

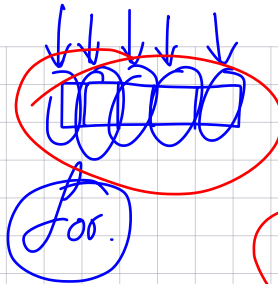
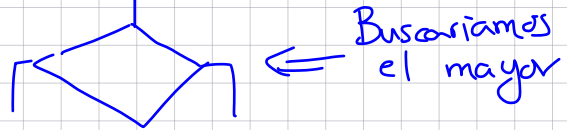
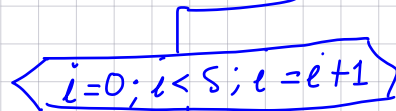
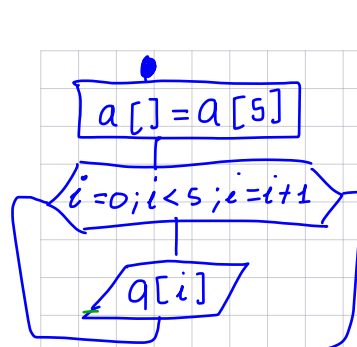
$$p = \text{sumca} / 5$$

$$p = 38/5$$

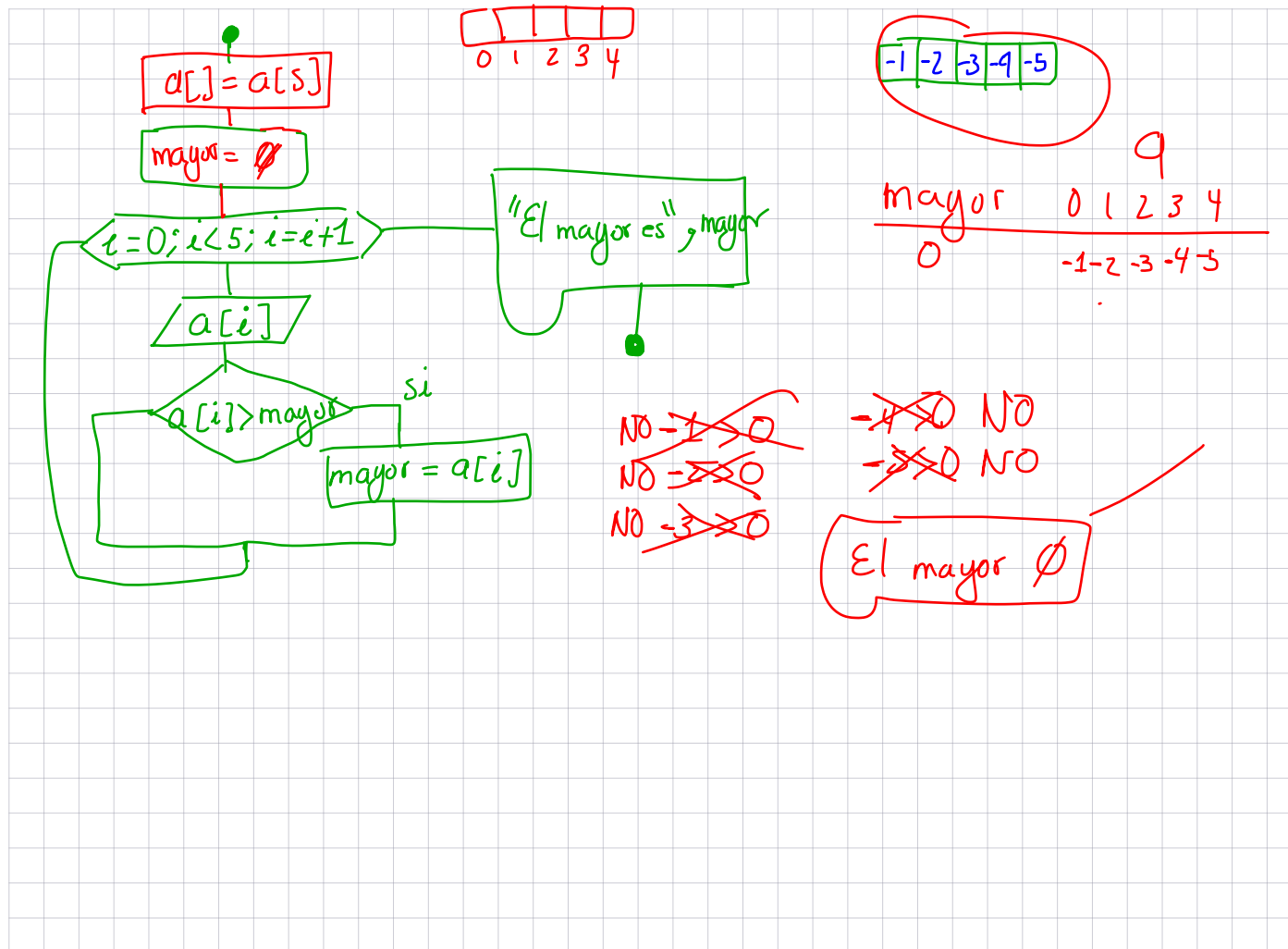
$$p = 7.6$$

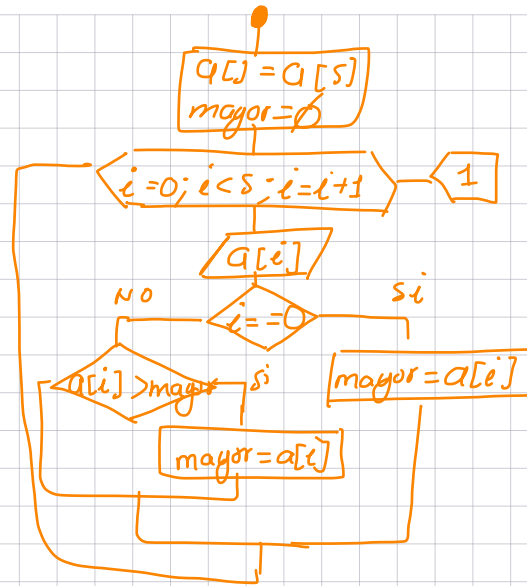
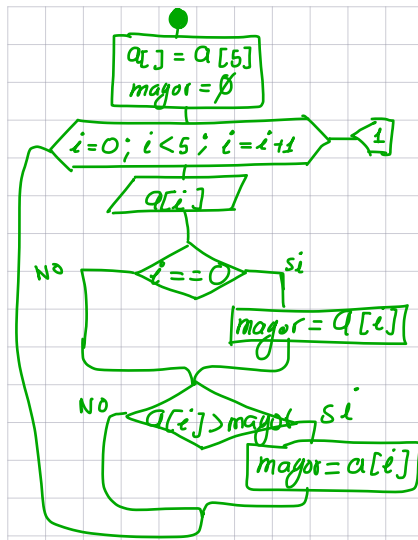
a	i	Suma	Pantalla
0	9	0	promedio 7.6
1	9	9	
2	3	18	
3	7	21	
4	11	44	
		33	
		22	
		11	
		5	
		4	
		38	



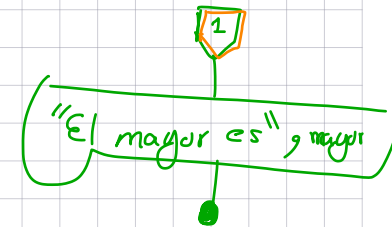


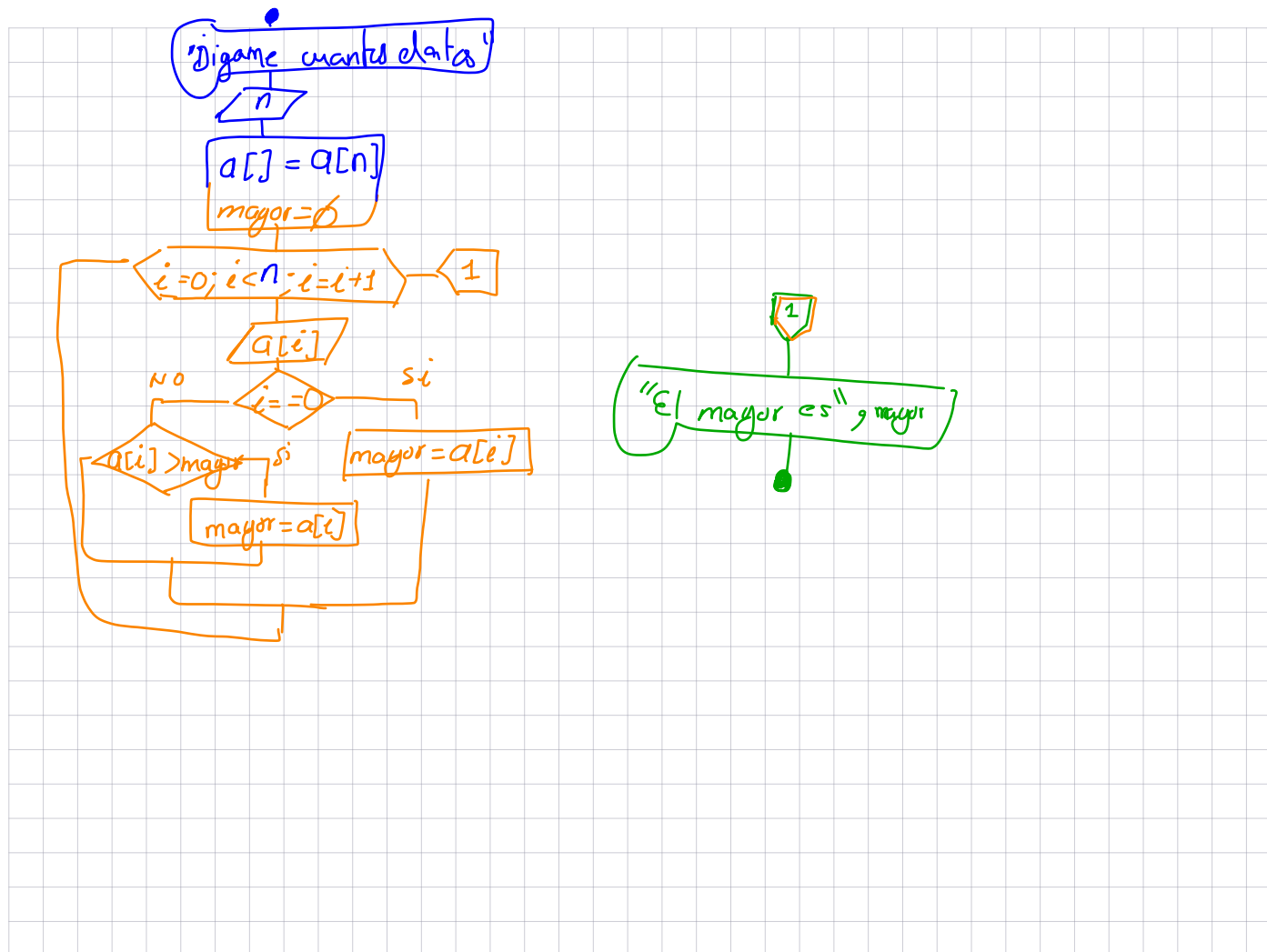
Vector — ciclo for





- ① Compararse entre ellos
- ② Identificar la primera comparación





	0	1	2	3	4
	4	8	1	3	9
	↑	↑			
4	8	1	3	9	
↑		↑			
1	8	4	3	9	
↑			↑		
1	8	4	3	9	
↑				↑	
1	8	4	3	9	
	↑	↑			
1	4	8	3	9	
	↑		↑		
1	3	8	4	9	
	↑			↑	

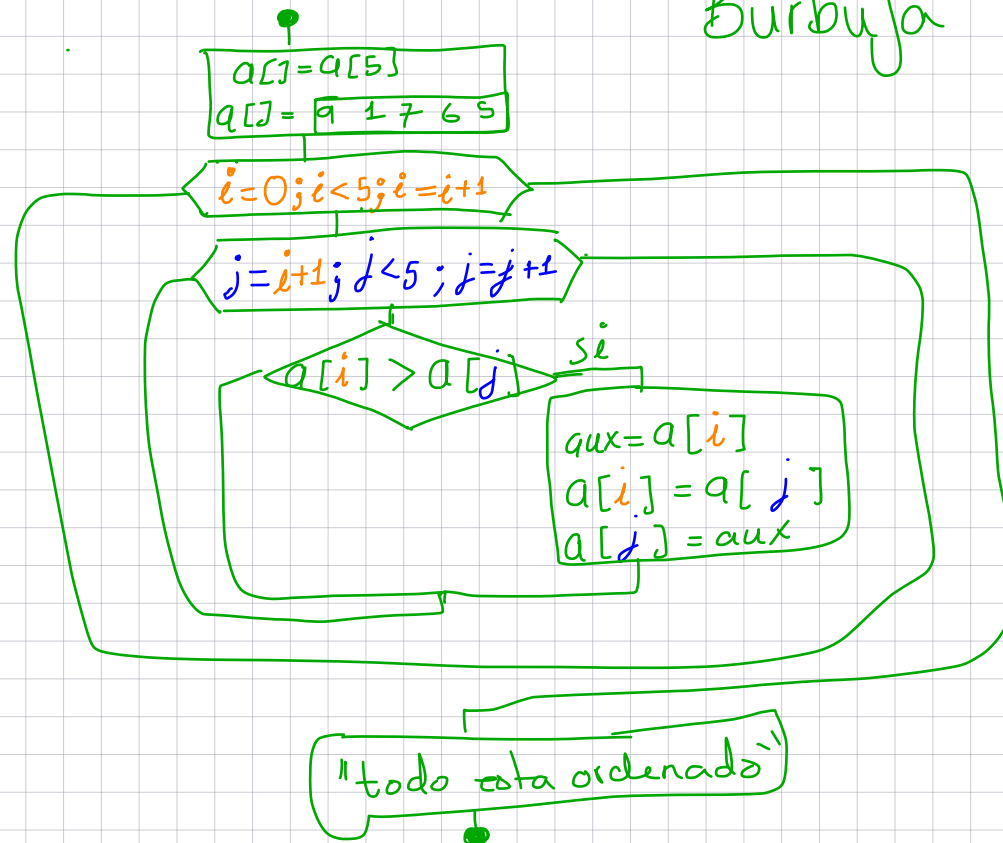
● ●
~~1~~ 1
~~2~~ 2
~~3~~ 3
~~4~~ 4
~~5~~ 5
~~6~~ 6
~~7~~ 7
~~8~~ 8
~~9~~ 9
 5

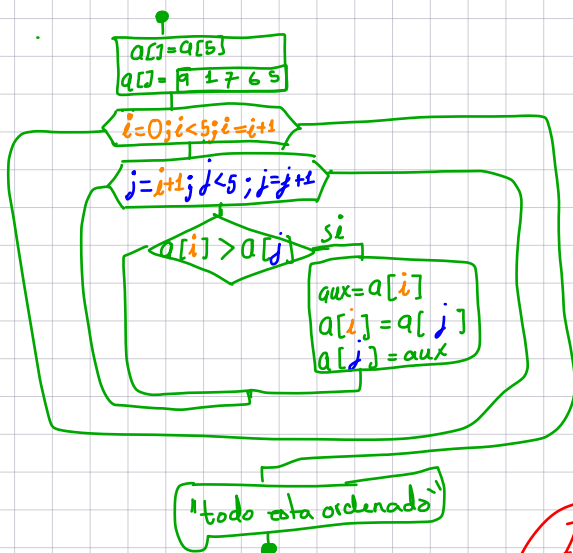
Burbuja (menor a mayor)

1	3	8	4	9
	↑	↑		
1	3	4	8	9
	↑		↑	
1	3	4	8	9
	↑		↑	

● > ● — si
 intercambiarlos

Burbuja



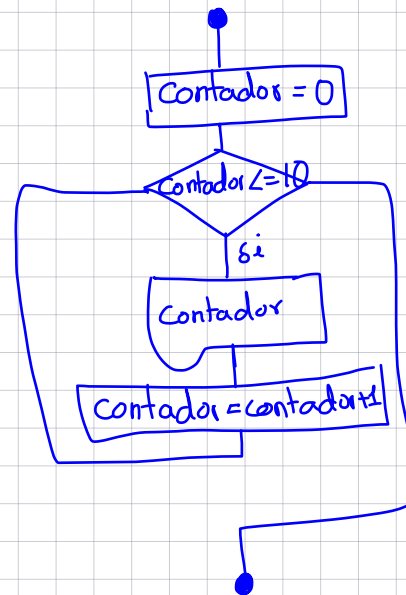
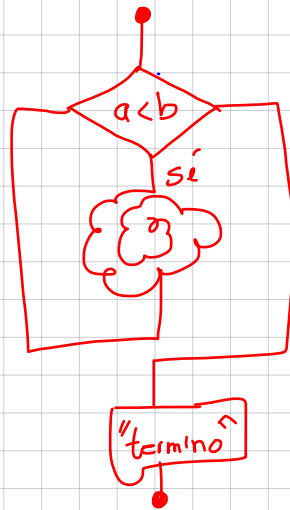


$j = 4 + 1$
 $j = 5$

		a					aux
i	j	0	1	2	3	4	9
0	1	1	7	6	9	9	
1	2	1	7	6	9	9	
2	3	1	7	6	9	9	
3	4	1	7	6	9	9	
4	5	1	7	6	9	9	
		1	7	6	9	9	
			7	6	9	9	
				6	9	9	
					9	9	
						9	
							9

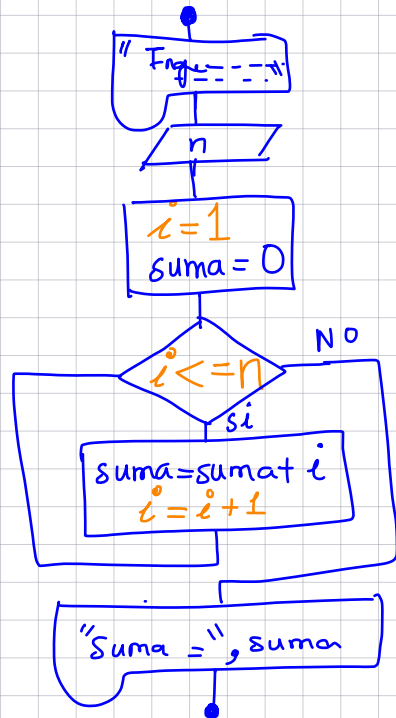
$a[3] > a[4]$
 $9 > 7$

While Mientras



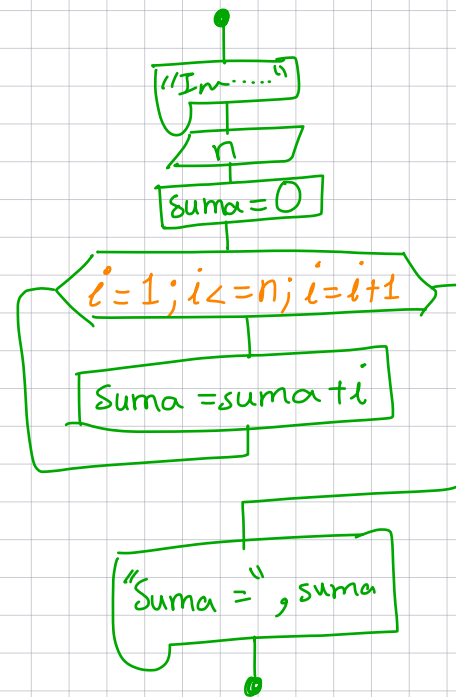
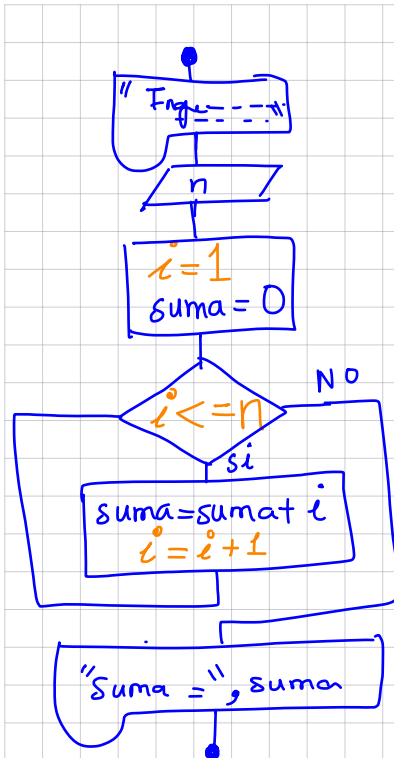
Contador	Pantalla
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	

Suma de los n numeros naturales

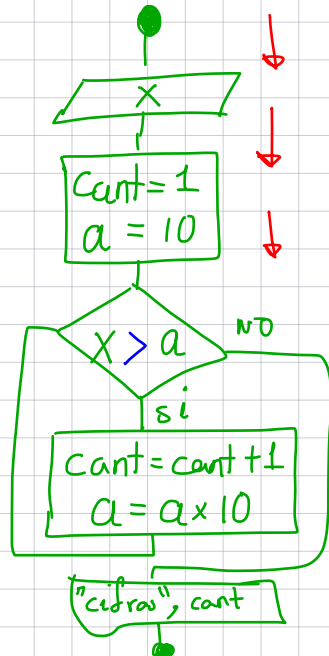


n	i	suma	Pantalla
4	1	1	
	2	3	
	3	6	
	4	10	
	5		Suma = 10

$5 \leq 4$

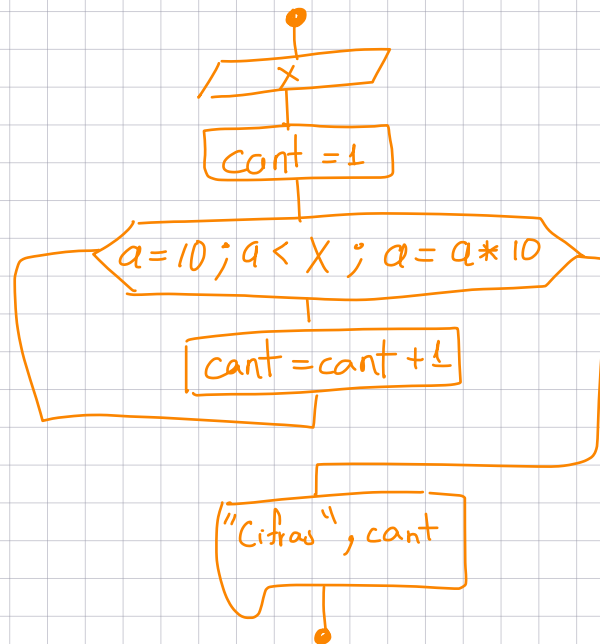
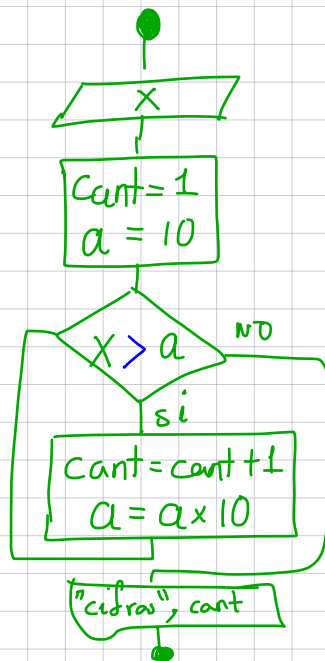


Cuente las cifras

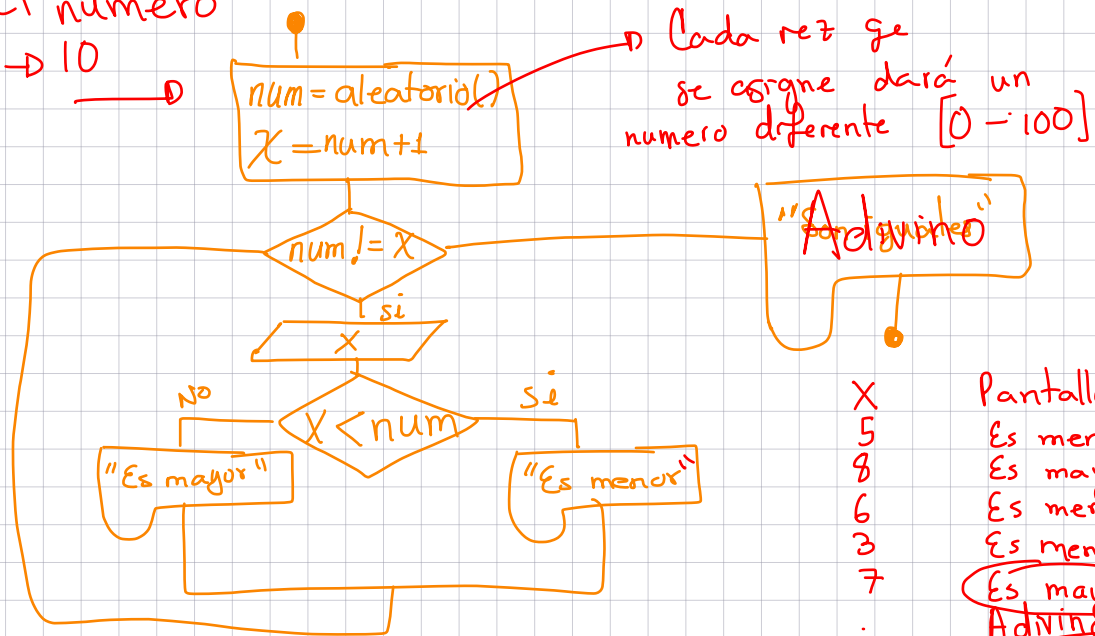


X	cont	a	Pantalla
300	1 2 3	10 100 1000	Cifras 3

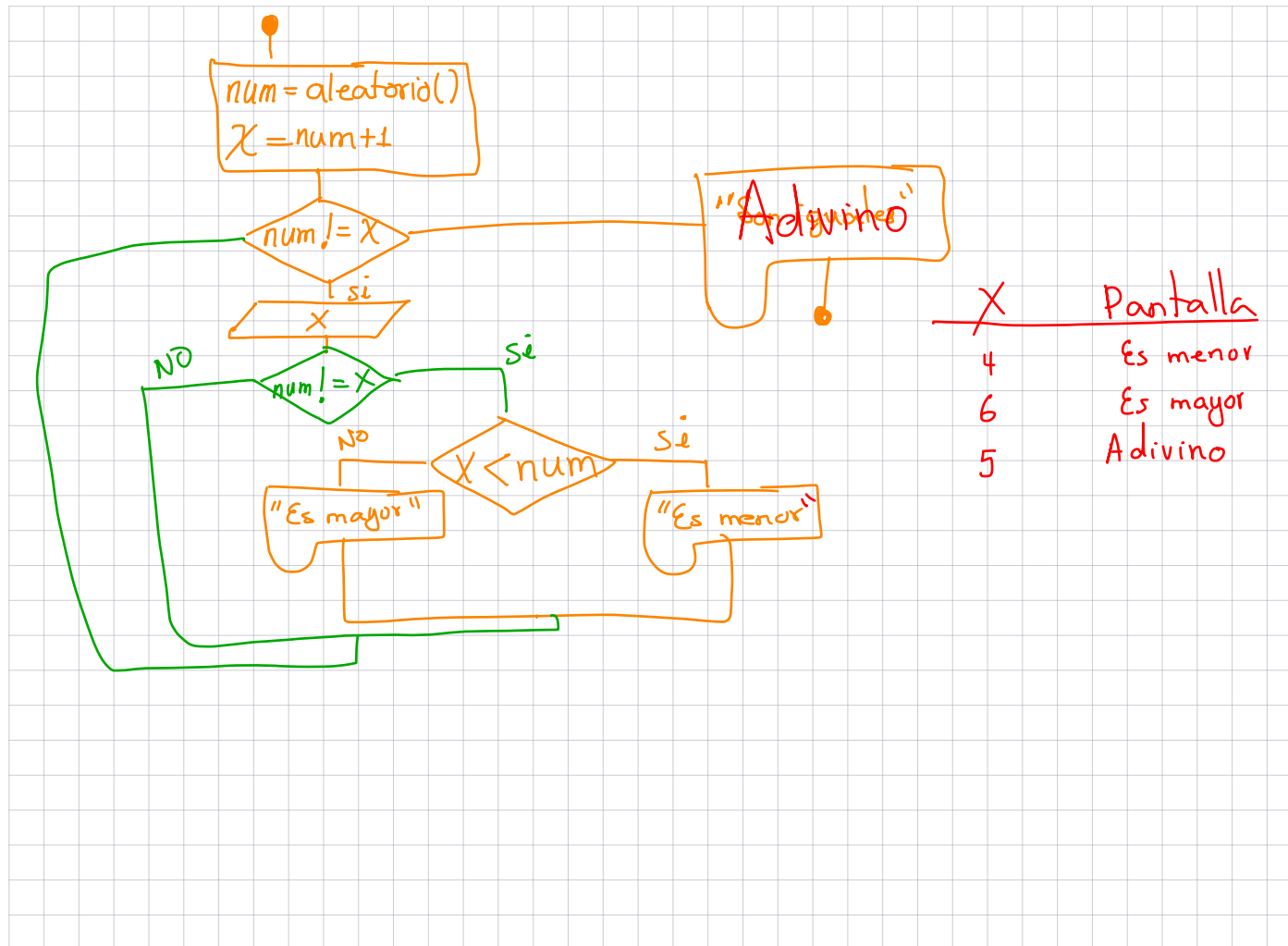
$$X > a$$
$$300 > 1000 \text{ NO}$$

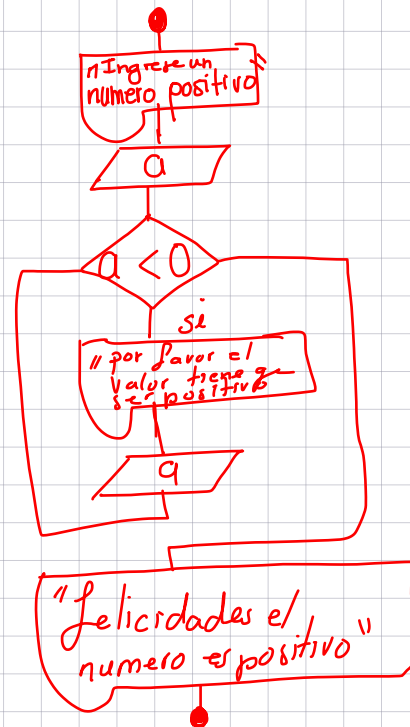


Adivina el numero
0 → 10

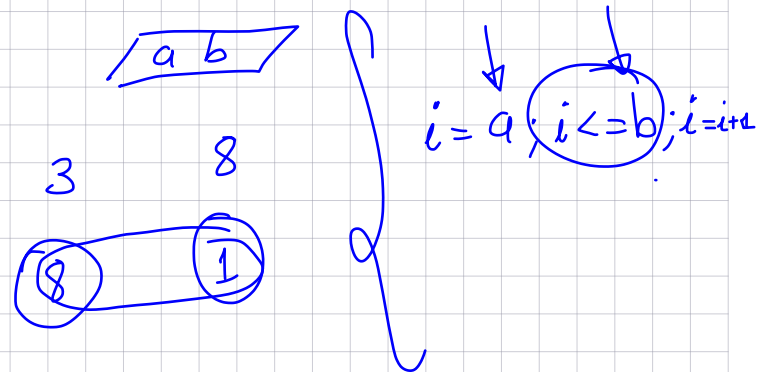


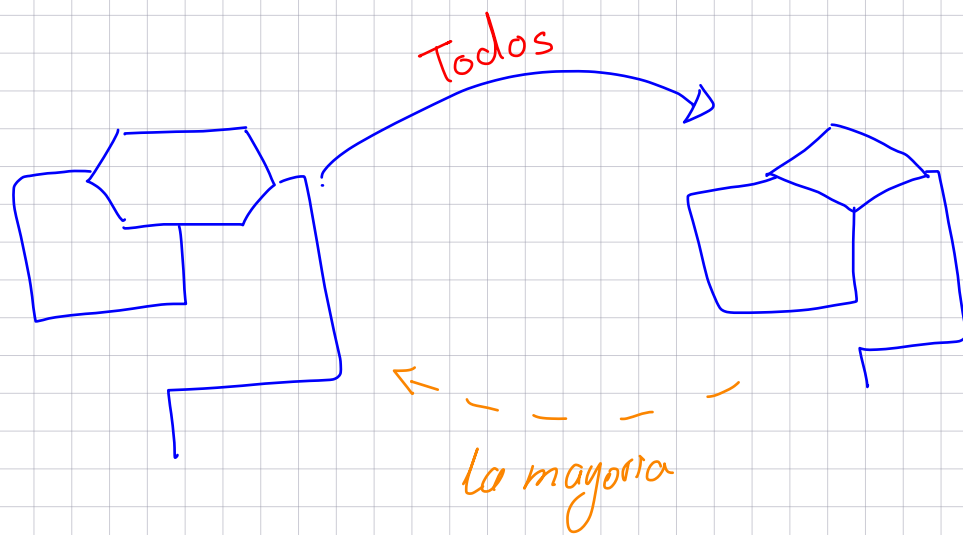
X	Pantalla
5	Es menor
8	Es mayor
6	Es menor
3	Es menor
7	Es mayor
.	<u>Adivina!</u>

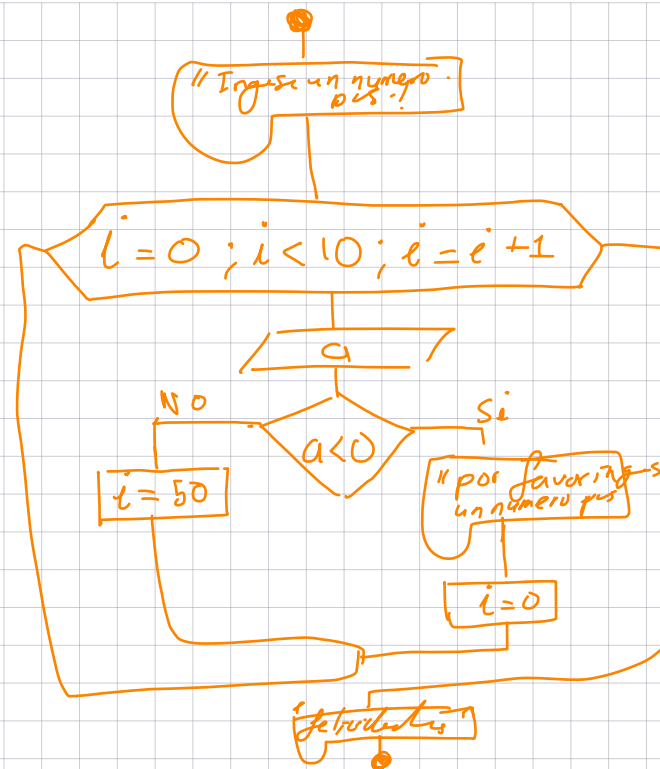
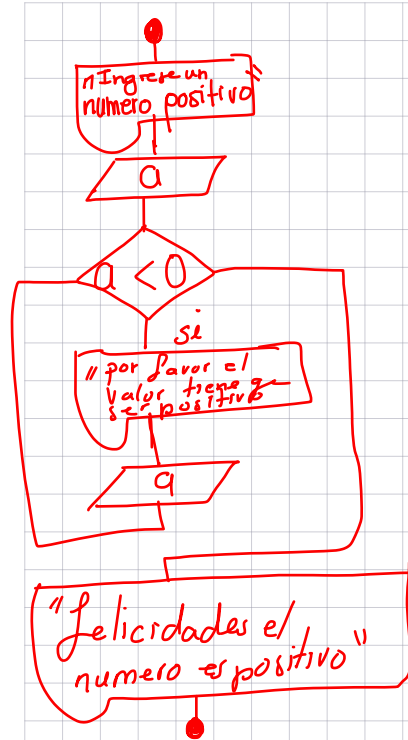




Validación







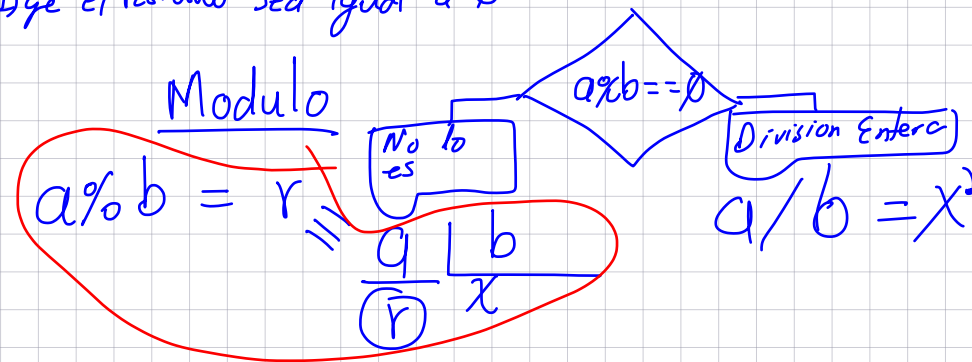
- Hacer un algoritmo que liste los divisores enteros de un número n dado por el usuario
- 1) que el residuo sea igual a 0

$$10 \% 3 = 1$$

$$16 \% 3 = 1$$

$$19 \% 3 = 1$$

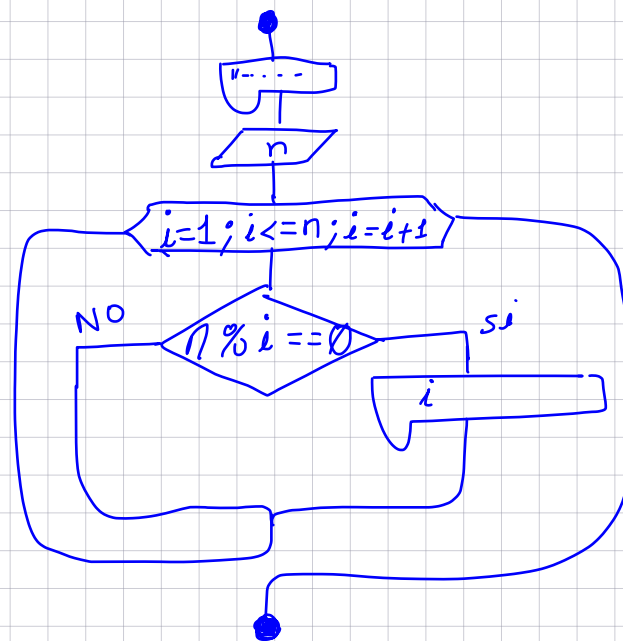
$$15 \% 3 = 0$$



$$\begin{array}{r} 15 \overline{) 3} \\ -15 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 16 \overline{) 3} \\ -15 \\ \hline 1 \end{array}$$

Modulo
 $a \% b = r$
$$\begin{array}{r} a \overline{) b} \\ r \overline{) x} \end{array}$$



• pedir 2 números
y vamos a imprimir los
números pares entre esos
2 números

3 7
3 4 5 6 7

$$3 \% 2 == 0$$

$$\begin{array}{r} 6 \\ 3 \overline{) 6} \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 2 \overline{) 3} \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ 2 \overline{) 4} \\ \hline \end{array}$$

$$\begin{array}{r} 7-2- \\ \hline 5-2- \\ \hline 3-2- \\ \hline 1 \end{array}$$

$$\begin{array}{r} 6-2- \\ \hline 4-2- \\ \hline 2-2- \\ \hline \end{array}$$

$$6 \rightarrow 6-2=4-2=2-2=0$$

$$\begin{array}{r} 6 \text{ } \overline{) 2} \\ -6 \\ \hline 0 \end{array}$$

$$a \% 2 \begin{cases} 0 \\ 1 \end{cases}$$

$$7 \rightarrow 7-2=5-2=3-2=1$$

$$\begin{array}{r} 7 \text{ } \overline{) 2} \\ -6 \\ \hline 1 \end{array}$$

$$a \% 4 \begin{cases} 0 \\ 1 \\ 2 \\ 3 \end{cases}$$

$$\begin{aligned} 8 \% 4 &= 0 \\ 9 \% 4 &= 1 \\ 10 \% 4 &= 2 \\ 11 \% 4 &= 3 \\ 12 \% 4 &= 0 \end{aligned}$$

$$\begin{array}{r} 6-2=4-2=2-2=0 \\ 7-2=5-2=3-2=1 \end{array}$$

$$a \% 2 \in \{0, 1\}$$

$$a \% 4 \in \{0, 1, 2, 3\}$$

Sistema

Base 8
Octal

Base 2

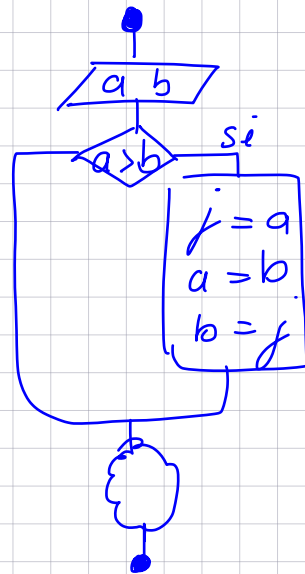
8

15-4?

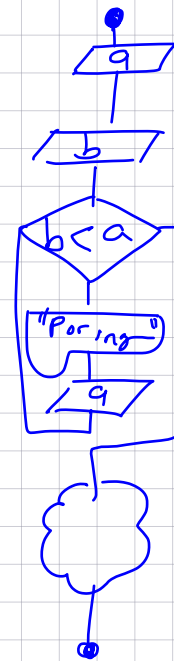
$$a \% 9 = \begin{cases} 0, 1, 2, 3, 4, 5 \\ 6, 7, 8 \end{cases}$$

[illegible]

- 1) Positivos (omitir)
- 2) ordenarlos
- 3)



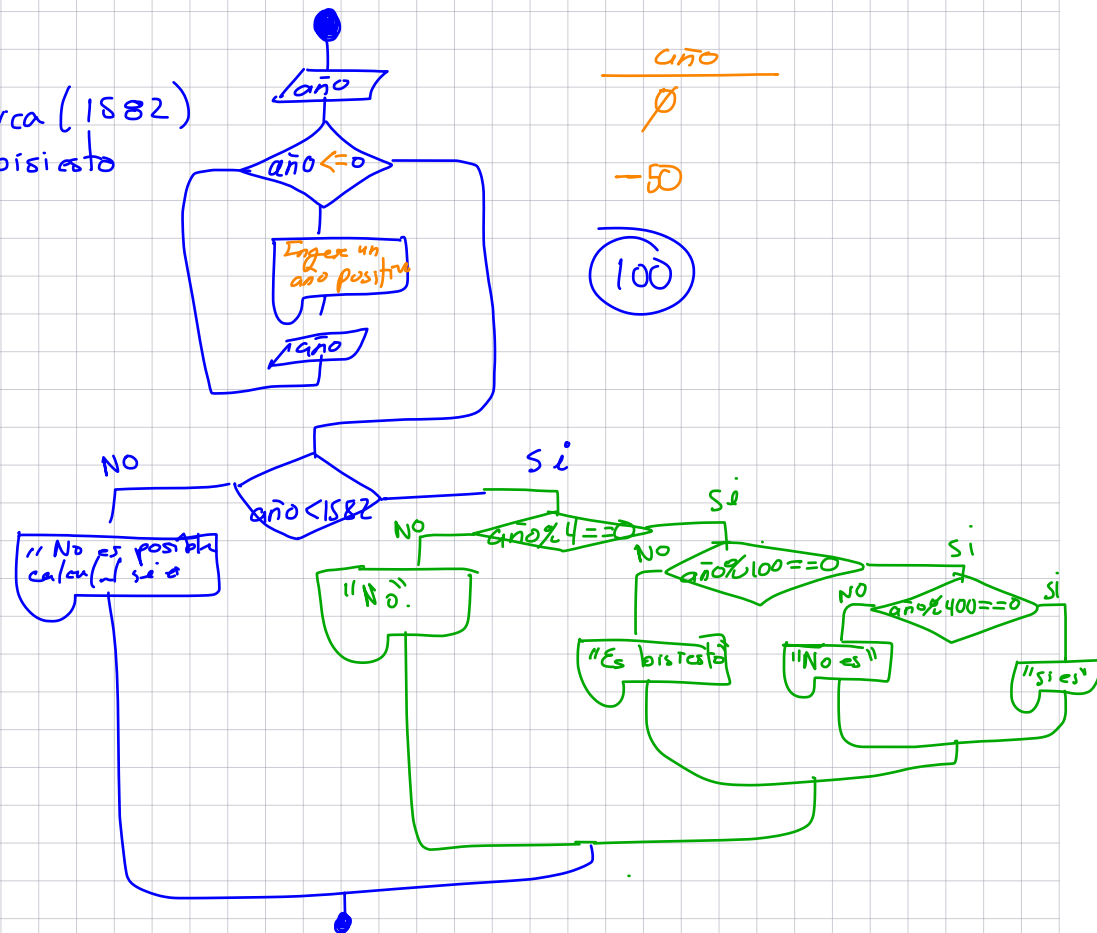
✓ 1S 8
8 1S



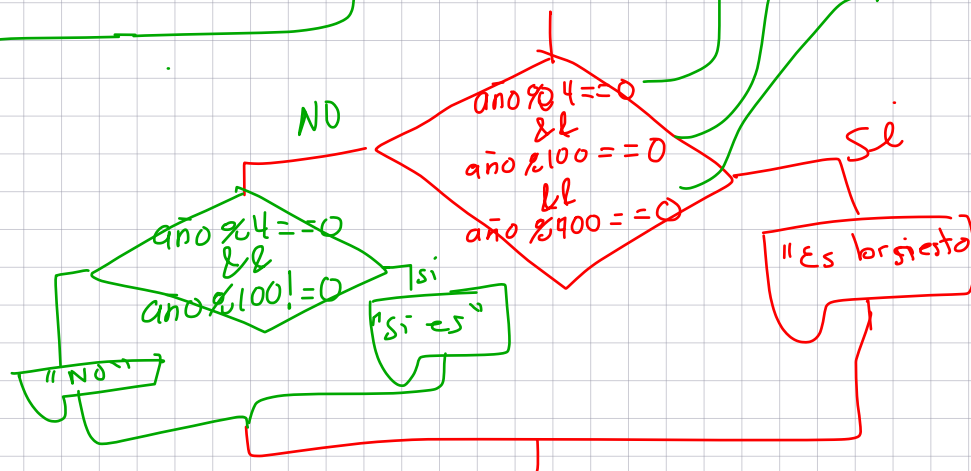
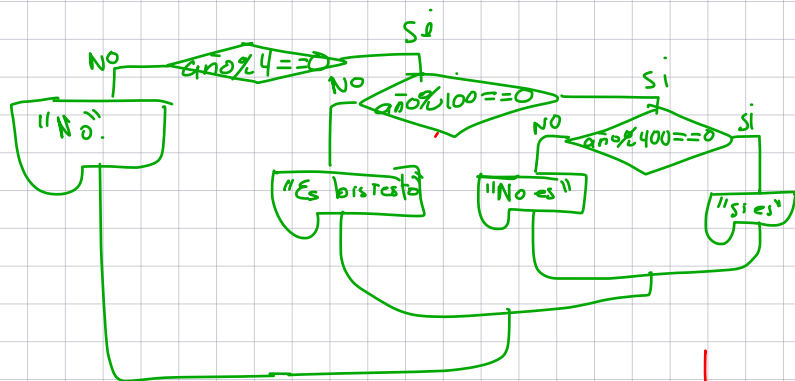
8 1S

- Ingresar Año
- Calcular si aplica (1582)
- Calcular si es bisiesto

1400
2000



año
0
-50
100



$$1997 \% 4 == 0$$

NO

$$\begin{aligned} \% 100 &== 0 \quad \text{Si} \\ \% 400 &== 0 \quad \text{Si} \end{aligned}$$

10.000.000.000

- ① 3? ^①45 = 7 \Rightarrow 70.000.000.000 \rightarrow 70.000 19h
1'000.000
- ② 2? 35 = 5 \Rightarrow 50.000.000.000 \rightarrow 50.000 14h