

## Variables

a

Obj a

edad

numeroDocumento

edad = 1098

numeroDocumento = "1098"

mes = "Enero"

$$\text{edad} = 20$$

$$\text{edad} = \text{edad} + 1$$

$$\text{edad} = (\text{edad} + 3) / (\text{edad} \div 3)$$

1 = Reemplazar

Resolver

1 → multi

2 → divis

3 → sumas

4 - Restas

$$\text{edad} = (\text{edad} + 3) / (\text{edad} \div 3)$$

$$\text{edad} = (21 + 3) / (21 \div 3)$$

$$\text{edad} = 3,42$$

Diagram showing the calculation:  $24 \div 7 = 7$  (circled), with an arrow pointing to the result 7,42 in the expression  $\text{edad} = 3,42$ .

Tabla de variables

edad

~~20~~

~~21~~

3,42

$$1 + 3 \times 4 + 3 =$$

$$4 \times 4$$

$$16 - 3 = 13$$

$$1 + 12$$

$$13 - 3 = 10$$

$a = 1$   
 $b = 1$   
 $\rightarrow a = a + b$   
 $\rightarrow b = a$   
 $\rightarrow a = a + b$   
 $\rightarrow b = a$   
 $\rightarrow a = a + b$

$a = 4 + 4$   
 $a = 8$

## Tabla Variables

| a            | b            |
|--------------|--------------|
| <del>1</del> | <del>1</del> |
| <del>2</del> | <del>2</del> |
| <del>4</del> | 4            |
| 8            |              |

$a = 1$   
 $a = a + a \rightarrow 2$   
 $a = a + 1 \rightarrow 3$   
 $a = a + 2 \rightarrow 5$   
 $a = a + 3 \rightarrow 8$   
 $a = a + 5 \rightarrow 13$   
 $a = a + 8 \rightarrow 21$

a  
1  
~~2~~  
~~3~~  
~~5~~  
~~8~~  
~~13~~  
21

fibonacci

1 2 3 5 8 13 21 34

$$\begin{aligned} x &= 0 \\ y &= 1 \end{aligned}$$

$$a = x + y$$

$$x = y$$

$$y = a$$

$$\begin{aligned} q &= x + y \\ x &= y \\ y &= a \end{aligned}$$

$$a = x + y \rightarrow$$

$$x = y$$

$$y = a$$

$$a = x + y$$

$$x = y$$

$$y = a$$

$$a = x + y$$

$$x = y$$

$$y = a$$

$$a = 1 + 2$$

$$a = 3$$

$$x = 2$$

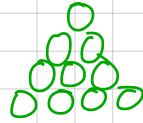
$$y = 3$$

| a            | x            | y            |
|--------------|--------------|--------------|
| <del>1</del> | <del>0</del> | <del>1</del> |
| <del>2</del> | <del>1</del> | <del>2</del> |
| 3            | 1            | 2            |
| 5            |              |              |
| 8            |              |              |
| 13           |              |              |
| 21           |              |              |
| 34           |              |              |
| 55           |              |              |
| 89           |              |              |

$$\begin{aligned}
 a &= 3 \\
 a &= a + 2 \\
 a &= a + 1
 \end{aligned}$$

$$\begin{aligned}
 2 \\
 2 \\
 2
 \end{aligned}$$

$$\begin{aligned}
 a &= 4 \\
 a &= a + 3 \\
 a &= a + 2 \\
 a &= a + 1
 \end{aligned}$$



$$\frac{3 \times (3+1)}{2}$$

$$\frac{3 \times 4}{2} = \frac{12}{2} = 6$$

$$5 \Rightarrow 5 + 4 + 3 + 2 + 1$$

$$6 \Rightarrow 6 + 5 + 4 + 3 + 2 + 1$$

$$\boxed{10 \Rightarrow 10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1}$$

$$b = 4 \Rightarrow a \text{ las canchales en la base}$$

$$a = \frac{b \times (b+1)}{2}$$

|                 |                 |
|-----------------|-----------------|
| $a$             | $a$             |
| $\frac{4}{2}$   | $\frac{4}{2}$   |
| $\frac{8}{2}$   | $\frac{8}{2}$   |
| $\frac{12}{2}$  | $\frac{12}{2}$  |
| $\frac{16}{2}$  | $\frac{16}{2}$  |
| $\frac{20}{2}$  | $\frac{20}{2}$  |
| $\frac{24}{2}$  | $\frac{24}{2}$  |
| $\frac{28}{2}$  | $\frac{28}{2}$  |
| $\frac{32}{2}$  | $\frac{32}{2}$  |
| $\frac{36}{2}$  | $\frac{36}{2}$  |
| $\frac{40}{2}$  | $\frac{40}{2}$  |
| $\frac{44}{2}$  | $\frac{44}{2}$  |
| $\frac{48}{2}$  | $\frac{48}{2}$  |
| $\frac{52}{2}$  | $\frac{52}{2}$  |
| $\frac{56}{2}$  | $\frac{56}{2}$  |
| $\frac{60}{2}$  | $\frac{60}{2}$  |
| $\frac{64}{2}$  | $\frac{64}{2}$  |
| $\frac{68}{2}$  | $\frac{68}{2}$  |
| $\frac{72}{2}$  | $\frac{72}{2}$  |
| $\frac{76}{2}$  | $\frac{76}{2}$  |
| $\frac{80}{2}$  | $\frac{80}{2}$  |
| $\frac{84}{2}$  | $\frac{84}{2}$  |
| $\frac{88}{2}$  | $\frac{88}{2}$  |
| $\frac{92}{2}$  | $\frac{92}{2}$  |
| $\frac{96}{2}$  | $\frac{96}{2}$  |
| $\frac{100}{2}$ | $\frac{100}{2}$ |

$$a = \frac{10 \times 11}{2}$$

$n$  primeros numeros naturales

$$\text{suma} = \frac{n * (n+1)}{2}$$

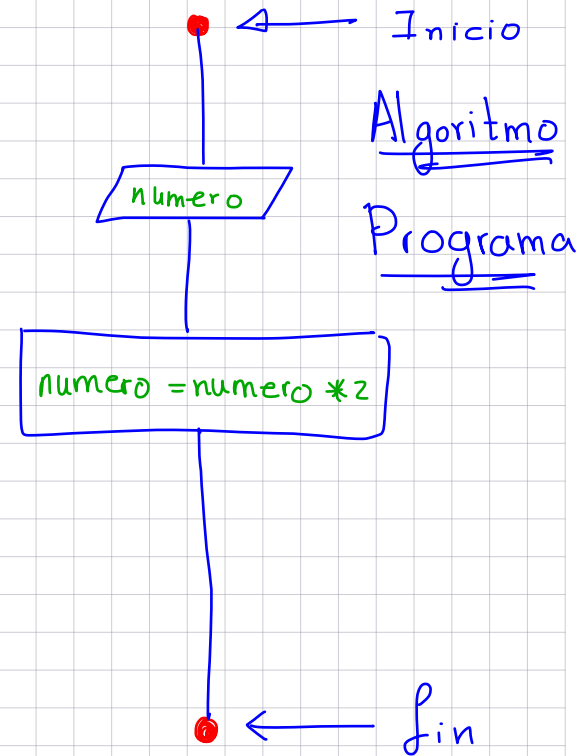
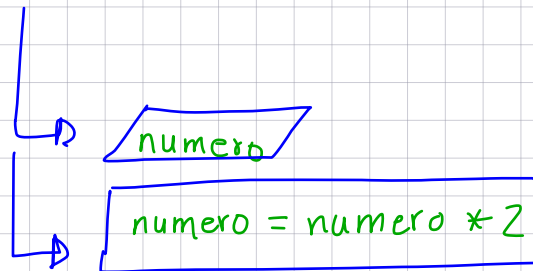
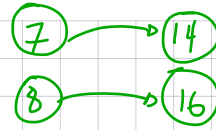
$$\text{base} = 100$$

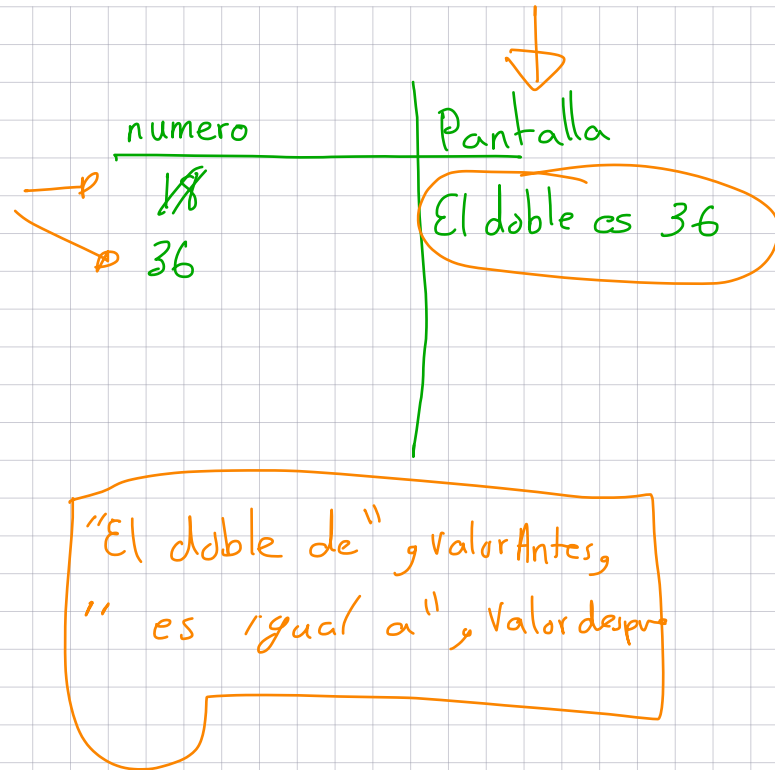
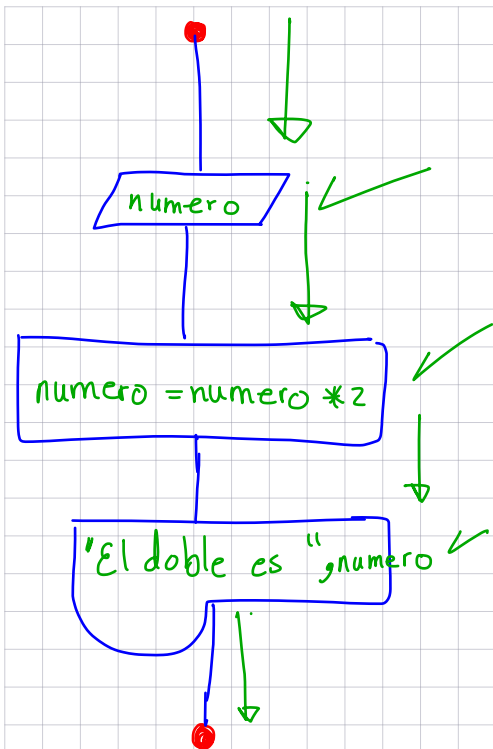
$$\text{Cantidad Canicas} = \frac{(\text{base}) * (\text{base} + 1)}{2}$$

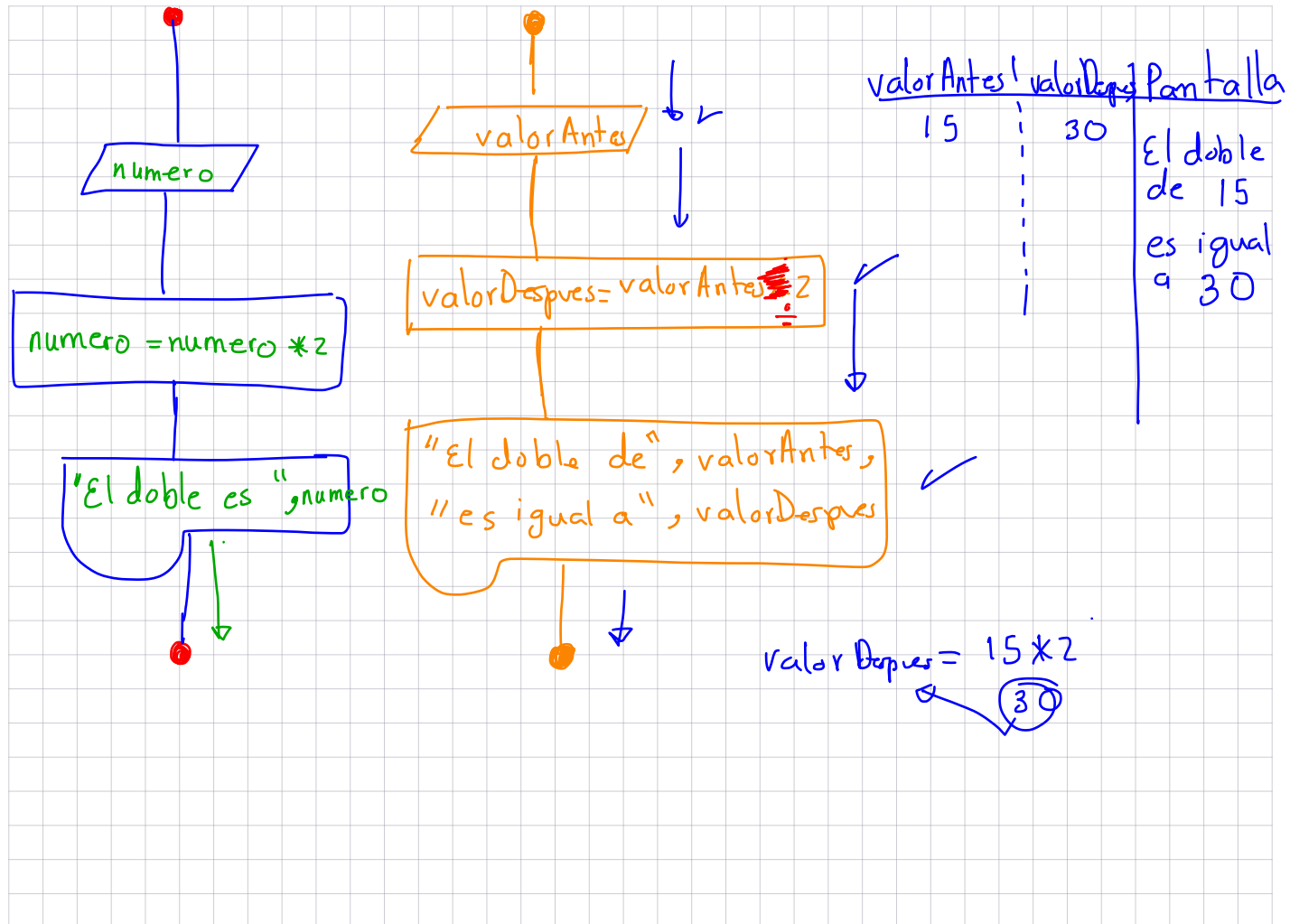
$$\frac{100 \times 101}{2} = 5050$$

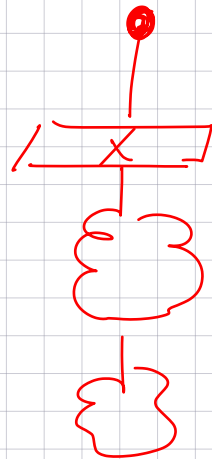


- Programa que calcule el doble de un número

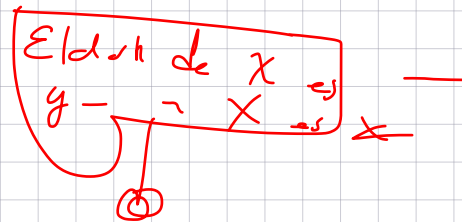


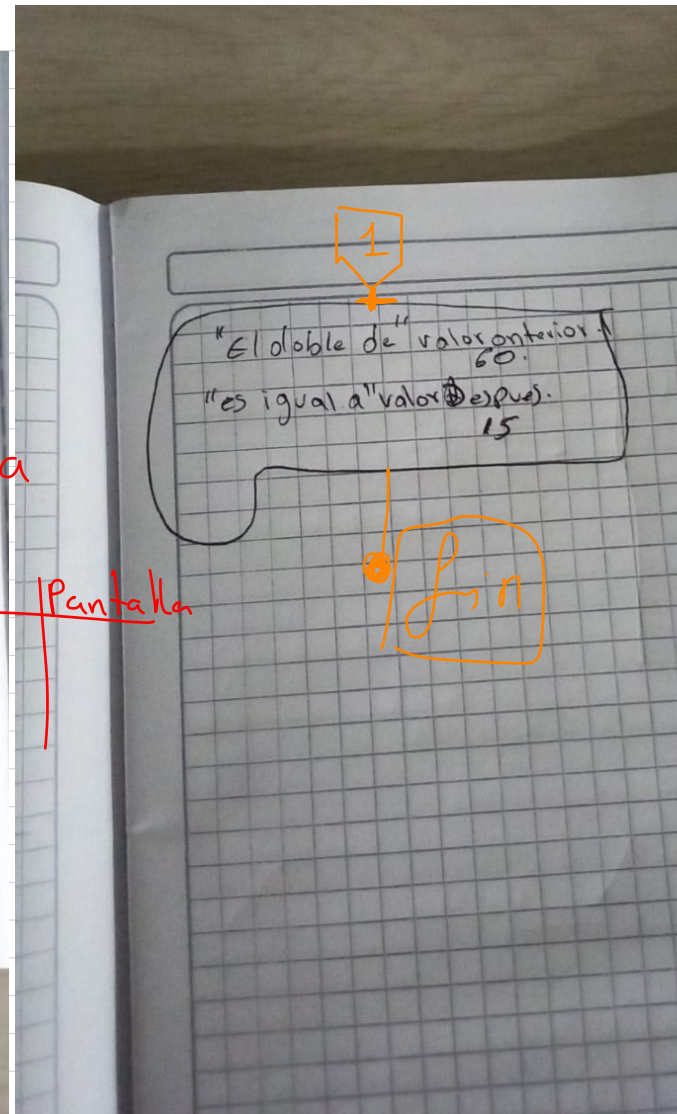
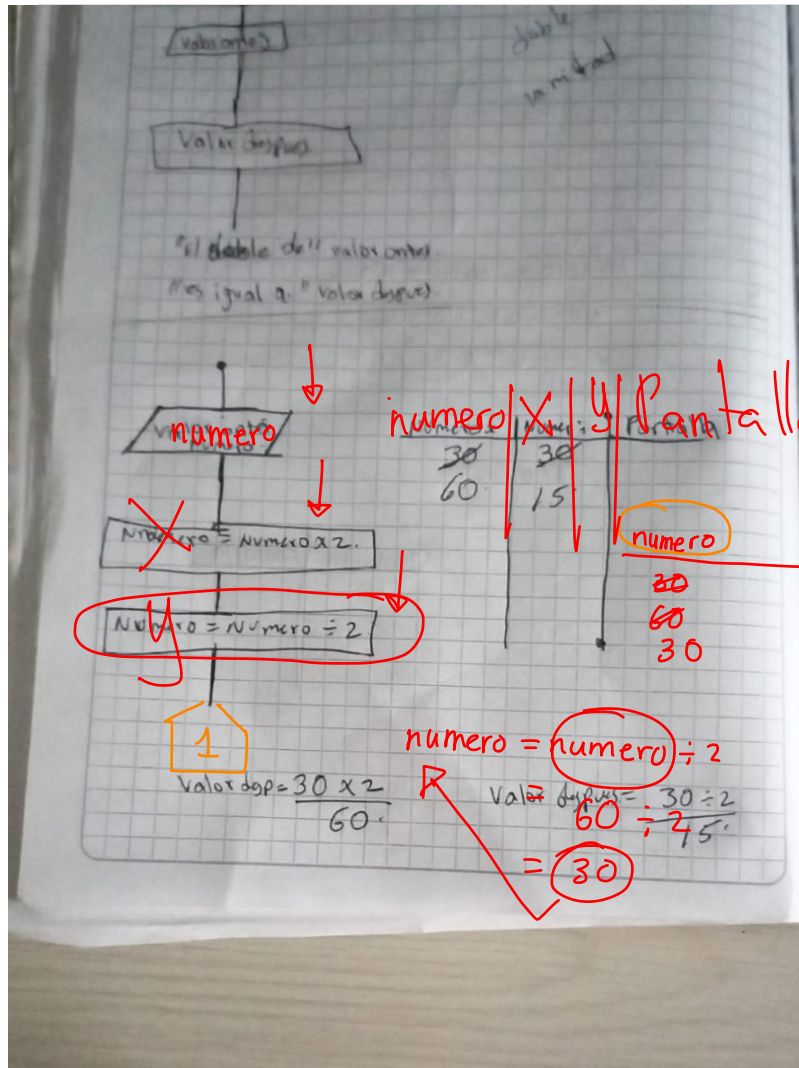


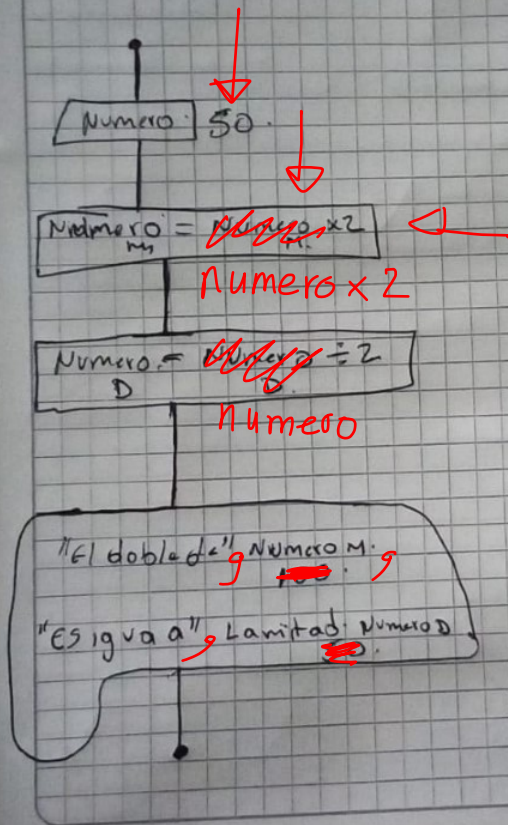




haga un programa que pida un  
numero y diga el doble del  
numero y la mitad del numero







| numero m |          | numero | Pantalla |
|----------|----------|--------|----------|
| Numero M | Numero D |        |          |
| 50       | 100      | 100    | El doble |
| 100      | 50       | 100    | Límite   |
|          |          |        | 50       |

$$\text{numero m} = \text{numero} \times 2$$

$$\text{Numero M} = \frac{50 \times 2}{100}$$

$$\text{Numero D} = \frac{100 \div 2}{50}$$

$$\text{numero D} = 50 \div 2$$

$$50 \times 2$$
  
$$100$$

50 →

El doble de 50 es 100  
y la mitad de 50 es 25

valor enter

valor display

"el doble de" valor enter  
"es igual a" valor display



numero M = numero x 2

numero D = numero ÷ 2

| Numero x | Numero i | Portala |
|----------|----------|---------|
| 30       | 30       |         |
| 60       | 15       |         |

| numero D | numero | numero M | Pantalla |
|----------|--------|----------|----------|
| 25       | 50     | 100      |          |

numero D = 50 ÷ 2

valor display = 25 x 2  
60

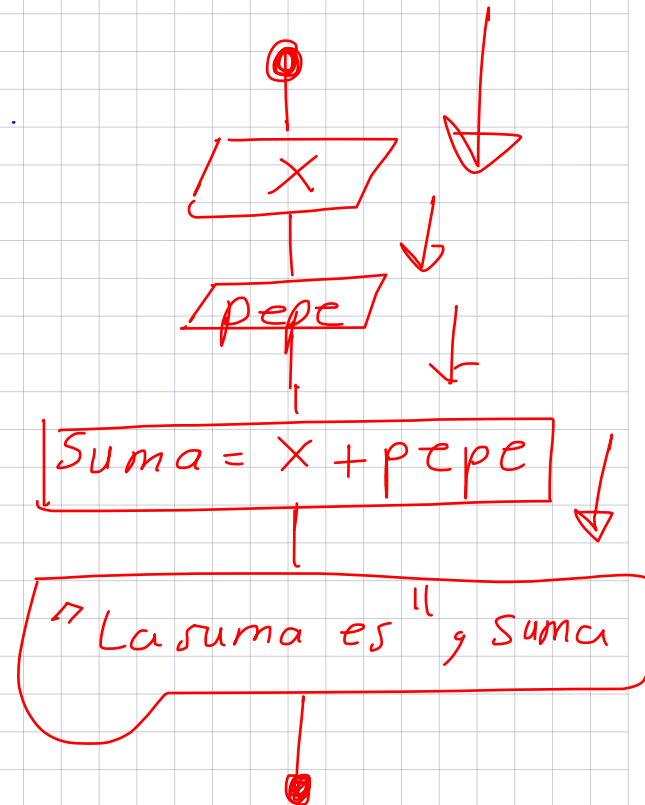
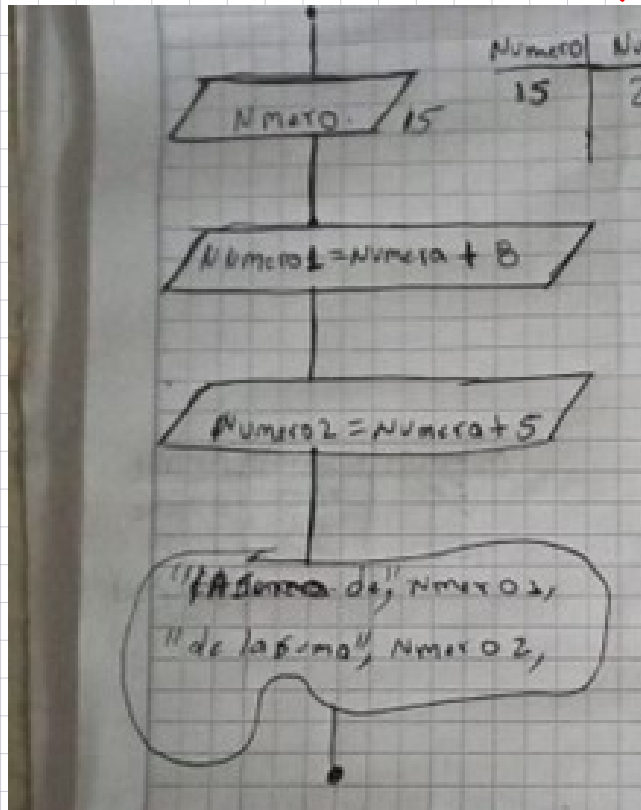
numero M = 50 x 2

100

valor display = 30 ÷ 2  
15



⇒ hacer un programa que sume 2 números.  
\* los 2 números hay que pedirlos



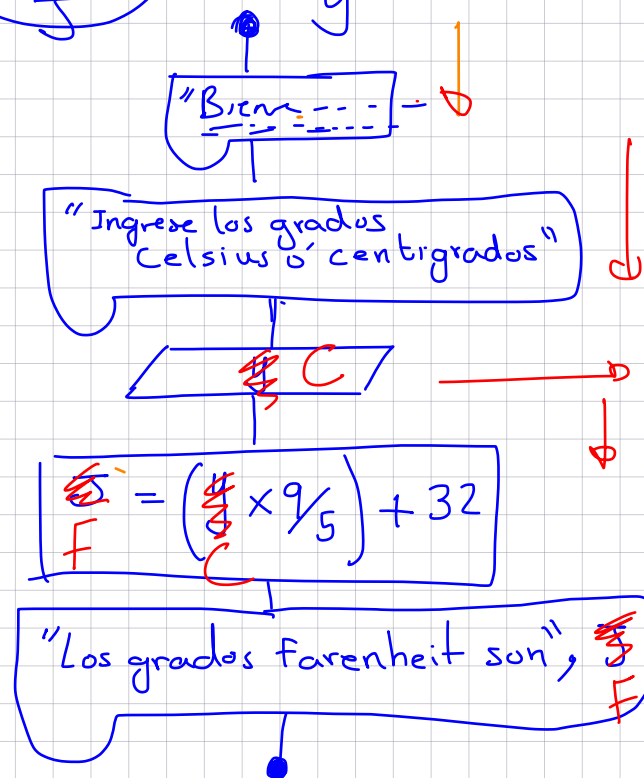
→ hacer un programa que convierta grados Celsius a  
grados Fahrenheit

- 1 → Ingresar los celsius
- 2 → pedir cuantos grados

③ - APLICAR FORMULA  $\Rightarrow$  GOOGLE

4 mostrar lo convertido

$$\text{Grados Fahrenheit} = (\text{grados centígrados} \times 9/5) + 32.$$



Pruebas de Escritorio

| Y  | J   | Pantalla   |
|----|-----|--|
| 45 | 113 | <div>Bienvenido</div> <div>Ingrese los grados Celsius o centígrados</div> <div>Los grados Fahrenheit son 113</div> |

$$J = (45 \times 9/5) + 32$$

$$J = 113$$

Grados centígrados = (grados Fahrenheit - 32)  $\times$  5/9.

Fahrenheit a Celsius  
Centígrados

|   |
|---|
| F |
| 5 |

$$\boxed{C = (F - 32) \times 5/9} \Rightarrow C = (F - 32) \times \frac{5}{9}$$

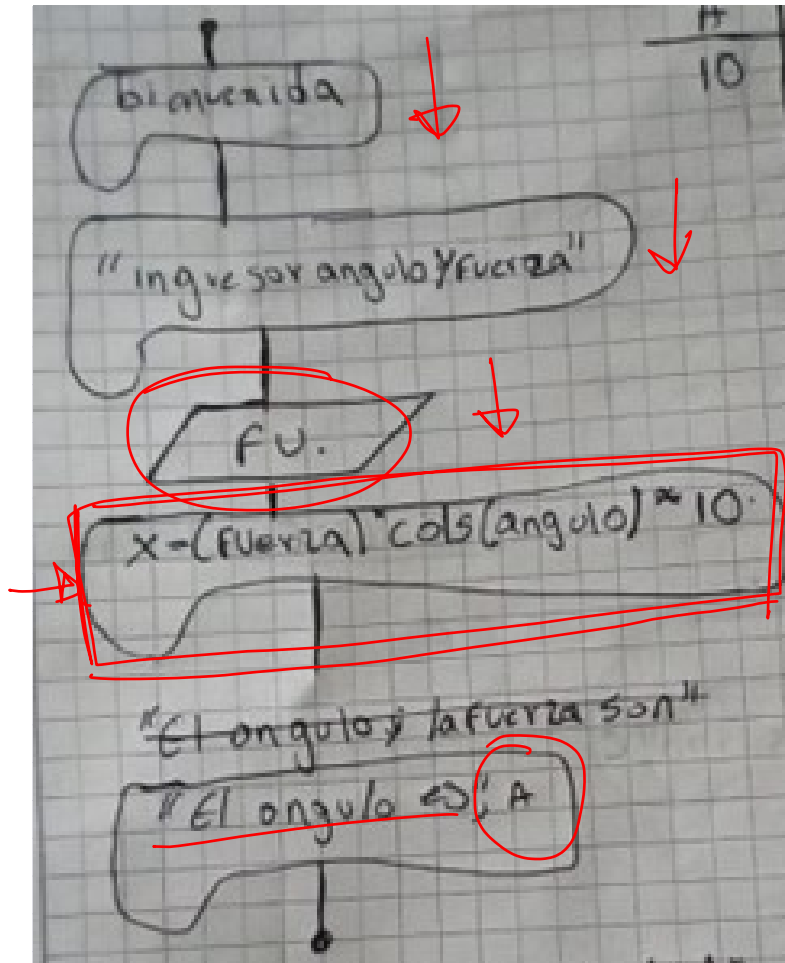
$$C = (5 - 32) \times 5/9 \Rightarrow$$
$$(-27) \times 5/9$$

Angulo  
Fuerza



...

$$x = (\text{Fuerza}) \cdot \cos(\text{angulo}) \cdot 10$$



FU  
50

Pantalla

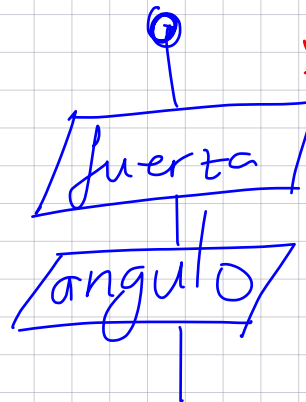
Ingresar.

$X = \text{FU} * \cos(\text{angulo}) * 10$

$\text{FU}$

$x = (\text{Fuerza}) * \cos(\text{angulo}) * 10$

$(\text{Fuerza}) * \cos(\text{angulo}) * 10$



| Click<br>Qw | Fuerza | angulo | Panta                   |
|-------------|--------|--------|-------------------------|
| 212,3       | 30     | 45     | la pos.<br>es<br>212,13 |

$\text{clienteQuiere} = (\text{Fuerza}) * \cos(\text{angulo}) * 10$

"la posrcion es" y clienteQuiere

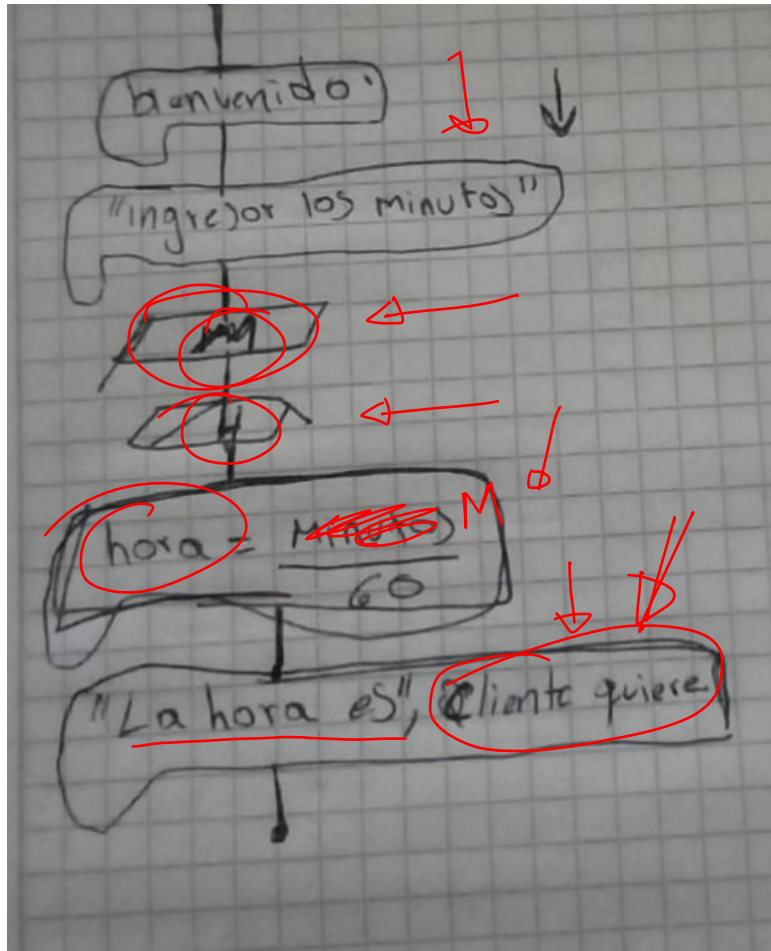
\* Convertidor de minutos a horas

60  $\rightarrow$  1 . formula =

120  $\rightarrow$  2

$$\text{horas} = \frac{\text{minutos}}{60}$$



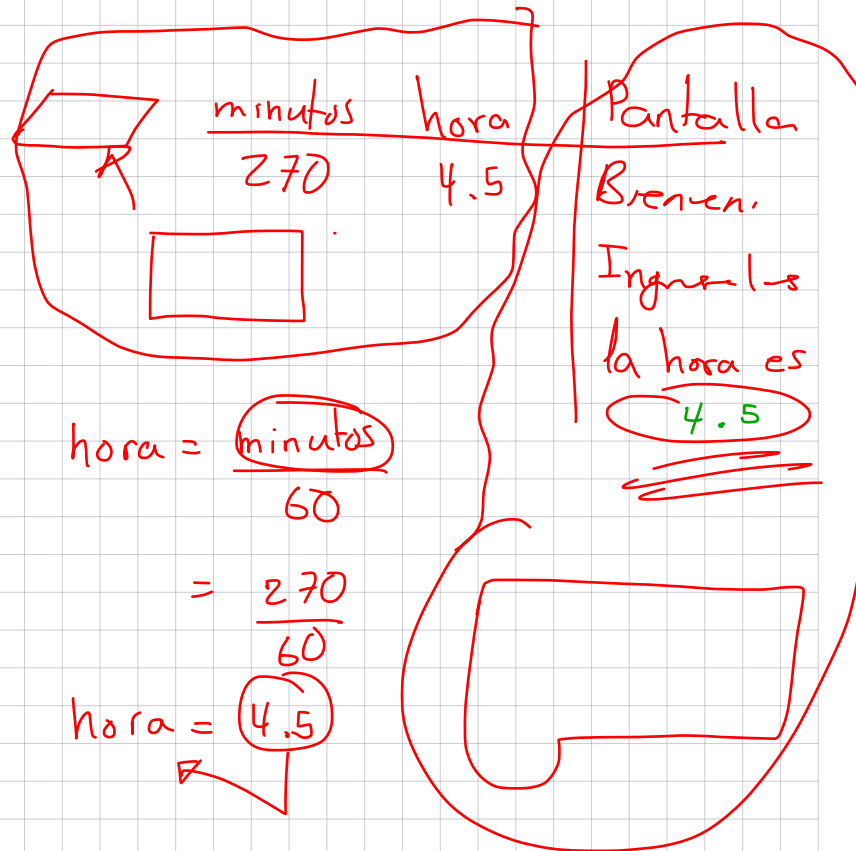
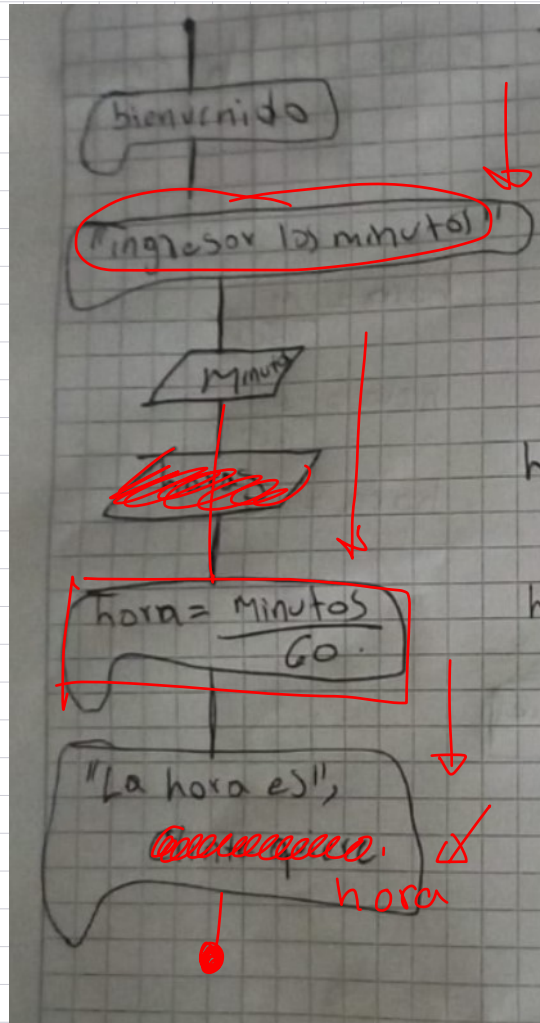


|    |    |      |            |
|----|----|------|------------|
| M  | H  | hora | Pantalla   |
| 60 | 60 | 1    | Ingrese... |
|    |    |      | La hora es |

$$\text{hora} = \frac{M}{60}$$

$$\text{hora} = \frac{60}{60}$$

$$\text{hora} = 1$$



# \* Convertidor de pies a kilometros

$$1 \text{ pie} = 30.48 \text{ cm}$$

$$1 \text{ metro} = 100 \text{ cm}$$

$$1 \text{ Kilometro} = 1000 \text{ metros}$$

$$5000 \text{ pies} \Rightarrow ? \quad 1,524 \text{ kilometros} \checkmark$$

$$30.000 \text{ pies} \Rightarrow 9,144 \text{ kilometros}$$

pies

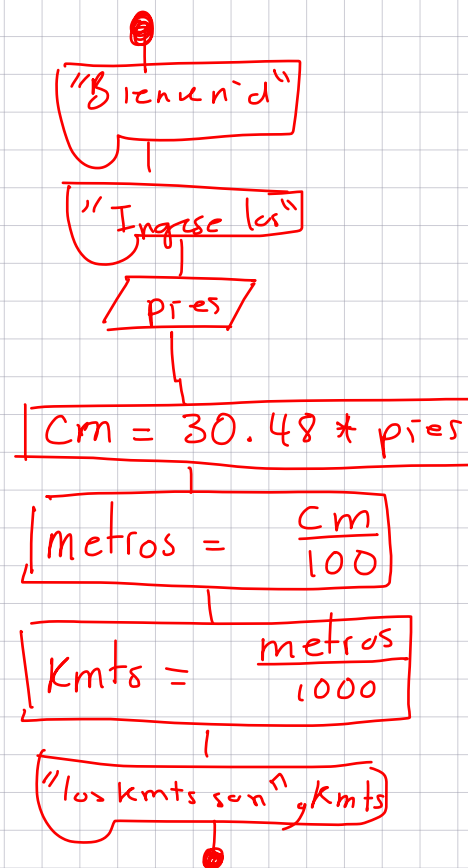


$$\text{pres} = 30000$$

$$F_1 = 30.48 * \cancel{30000}^{\text{pres}}$$

$$F_2 = \frac{F_1}{100}$$

$$F_3 = \frac{F_2}{1000}$$



$$f(x) = \frac{3x}{x} \equiv f(x) = 2x$$

$$\frac{30.000 \text{ pes} *}{1} * \frac{30.48 \text{ cm}}{1} * \frac{1 \text{ metro}}{100} * \frac{1 \text{ kms}}{1000 \text{ metro}}$$

$$\text{kilometros} = \frac{\text{PIES} \times 30.48 \times 1 \times 1}{1 \times 1 \times 100 \times 1000} \Rightarrow \boxed{\frac{\text{PIES} \times 30.48}{100000}}$$

kilometros  $\rightarrow$  yardas

21 kmts

1 yarda = 0,9144 mts

1 yarda = 91,44 cms

22 975

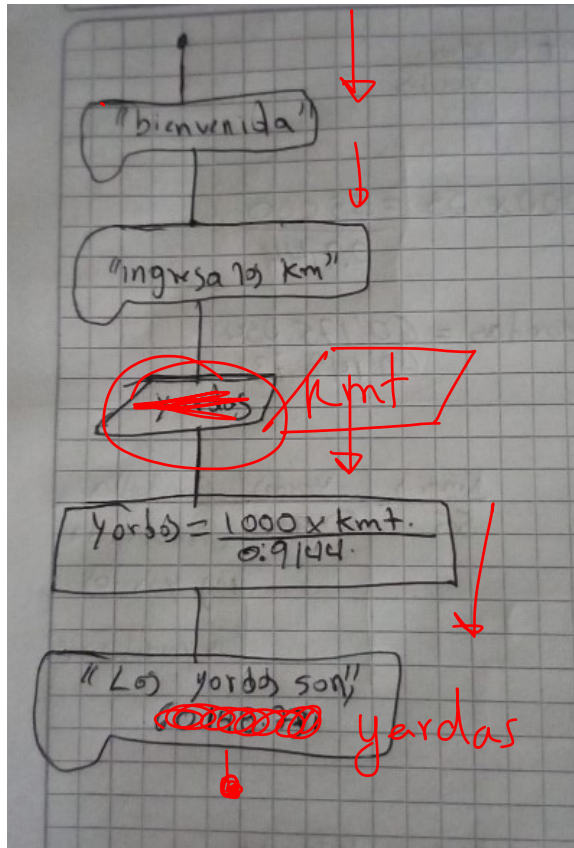
22.965,879

55 kmts

55km

$$\frac{\text{km}}{\text{yardas}} = \frac{\text{metres} \times \text{kmts}}{\text{yardes}} = \frac{1000 \times 55}{0.9144} = \frac{55.000}{0.9144}$$

$$\boxed{\text{yardas} = \frac{1000 \times \text{kmts}}{0.9144}}$$



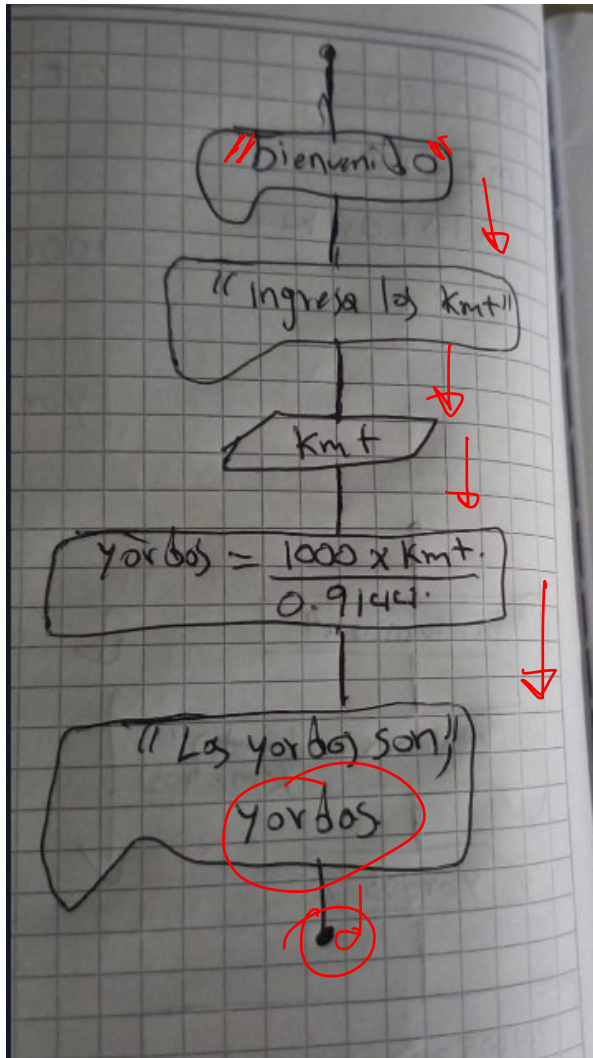
| yardas    | Kmt |
|-----------|-----|
| 109361,32 | 100 |

| Pantalla       |
|----------------|
| bienvenida     |
| Ingresalos km  |
| las yardas son |
| 60111          |
| ?              |

$$\text{yardas} = \frac{1000 \times \text{Kmt}}{0.9144}$$

$$\text{yardas} = \frac{1000 \times 100}{0.9144} = 109361,32$$





| km | yardas     | Pantalla                  |
|----|------------|---------------------------|
| 50 | 54680.6649 | Bienvenida                |
|    |            | Ingrese los km            |
|    |            | Las yardas son 54680.6649 |

$$yardas = \frac{1000 \times Km}{0.9144}$$

$$= \frac{1000 \times 50}{0.9144}$$

$$yardas = 54680.6649$$

# \* Convertir de onzas a litros

1 → 28.35 ~~gramos~~  
~~onzas~~  
~~peso~~

1 Litro 1000 ml  
↓  
volumen

1 onza  
líquido 29.574 mililitros líquido

Litros = onzas \* 1000 ?