



**Sistema: ALEMAN**

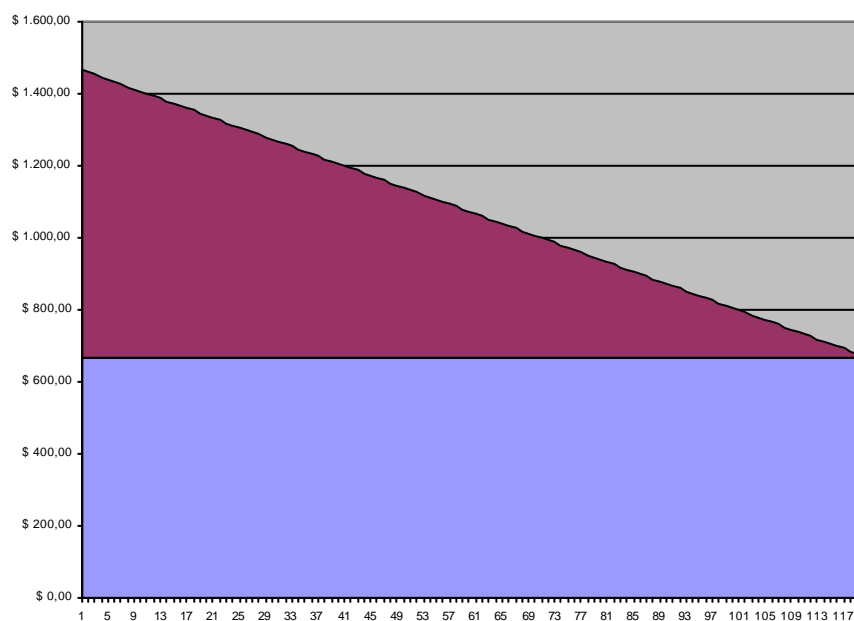
$V \rightarrow V_N = \$80000$

$N \rightarrow N = 120$

$I \rightarrow i = 0.01$

$K \rightarrow K = 50$

A	Debe Anterior	47333.333	$(V - (K(V \div N))) + (V \div N)$
B	Amort. Real $[T_K]$	666.666	$V \div N$
C	Interes Simple $[I_K]$	473.333	$(VI(N-K+1)) \div N$
D	Cuota $[C_K]$	1140	$(V \div N) + ((VI(N-K+1)) \div N)$
E	$\sum(T_K)$	33333.333	$K(V \div N)$
F	$\sum(I_K)$	31833.333	$K(VI + ((VI(N-K+1)) \div N)) \div 2$
G	$\sum(C_K)$	65166.666	$(K(V \div N)) + (K(VI + ((VI(N-K+1)) \div N)) \div 2)$
H	Deuda	46666.666	$V - (K(V \div N))$





**Sistema: ALEMAN INVERSO**

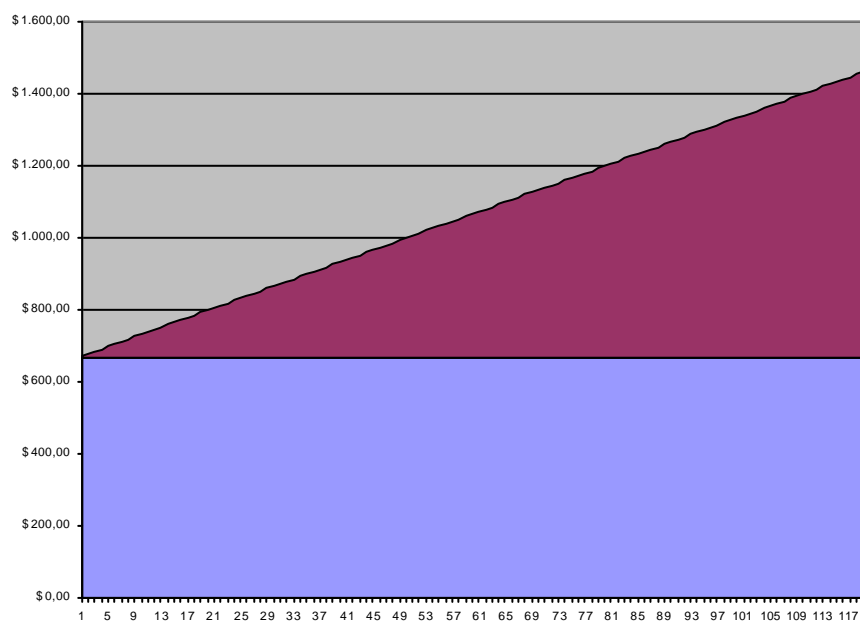
$V \rightarrow V_N = \$80000$

$N \rightarrow N = 120$

$I \rightarrow i = 0.01$

$K \rightarrow K = 50$

A	Debe Anterior	47333.333	$(V - (K(V \div N))) + (V \div N)$
B	Amort. Real $[T_K]$	666.666	$V \div N$
C	Interes Simple $[I_K]$	333.333	$VIK \div N$
D	Cuota $[C_K]$	1000	$(V \div N) + (VIK \div N)$
E	$\sum(T_K)$	33333.333	$K(V \div N)$
F	$\sum(I_K)$	8500	$K(VI \div N + VIK \div N) \div 2$
G	$\sum(C_K)$	41833.333	$(K(V \div N)) + (K(VI \div N + VIK \div N) \div 2)$
H	Deuda	46666.666	$V - (K(V \div N))$





**Sistema: FRANCES**

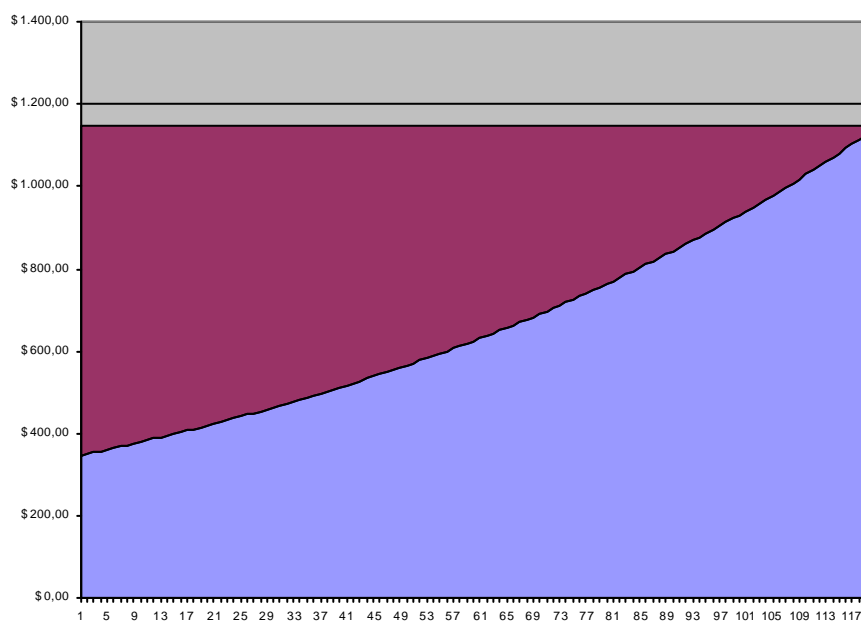
V →  $V_N = \$80000$

N →  $N = 120$

I →  $i = 0.01$

K →  $K = 50$

A	Debe Anterior	58148.081	$(V - (V * ((1+I)^K - 1) \div ((1+I)^N - 1))) + (((V * I) \div (1 - (1+I)^{-N})) - (V - (V * ((1+I)^{K-1} - 1) \div ((1+I)^N - 1))) * I)$
B	Amort. Real [ $T_K$ ]	566.286	$((V * I) \div (1 - (1+I)^{-N})) - (V - (V * ((1+I)^{K-1} - 1) \div ((1+I)^N - 1))) * I$
C	Interes Simple [ $I_K$ ]	581.480	$(V - (V * ((1+I)^{K-1} - 1) \div ((1+I)^N - 1))) * I$
D	Cuota [ $C_K$ ]	1147.767	$(V * I) \div (1 - (1+I)^{-N})$
E	$\sum(T_K)$	22418.205	$V * ((1+I)^K - 1) \div ((1+I)^N - 1)$
F	$\sum(I_K)$	34970.174	$(K * ((V * I) \div (1 - (1+I)^{-N}))) - (V * ((1+I)^K - 1) \div ((1+I)^N - 1))$
G	$\sum(C_K)$	57388.379	$K * ((V * I) \div (1 - (1+I)^{-N}))$
H	Deuda	57581.794	$V - (V * ((1+I)^K - 1) \div ((1+I)^N - 1))$





**Sistema: TASA DIRECTA**

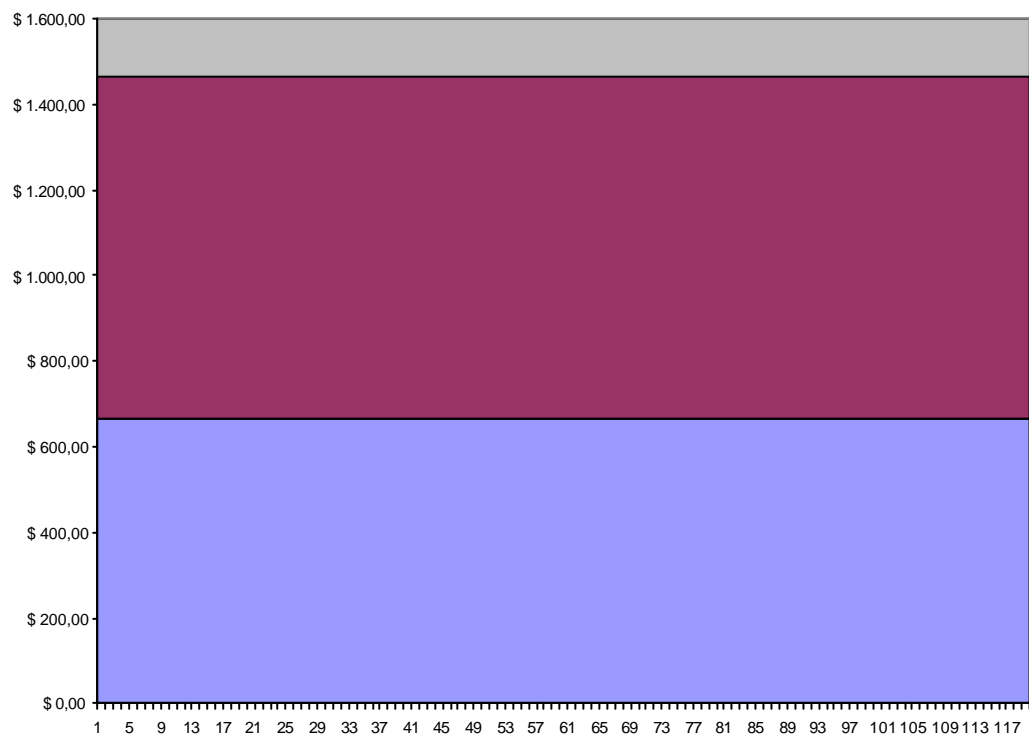
$V \rightarrow V_N = \$80000$

$N \rightarrow N = 120$

$I \rightarrow i = 0.01$

$K \rightarrow K = 50$

A	Debe Anterior	47333.333	$(V - (K(V \div N))) + (V \div N)$
B	Amort. Real $[T_K]$	666.666	$V \div N$
C	Interes Simple $[I_K]$	800	$VI$
D	Cuota $[C_K]$	1466.666	$(V \div N) + (VI)$
E	$\sum(T_K)$	33333.333	$K(V \div N)$
F	$\sum(I_K)$	40000	$K(VI)$
G	$\sum(C_K)$	73333.333	$(K(V \div N)) + (K(VI))$
H	Deuda	46666.666	$V - (K(V \div N))$





**Sistema: AMERICANO**

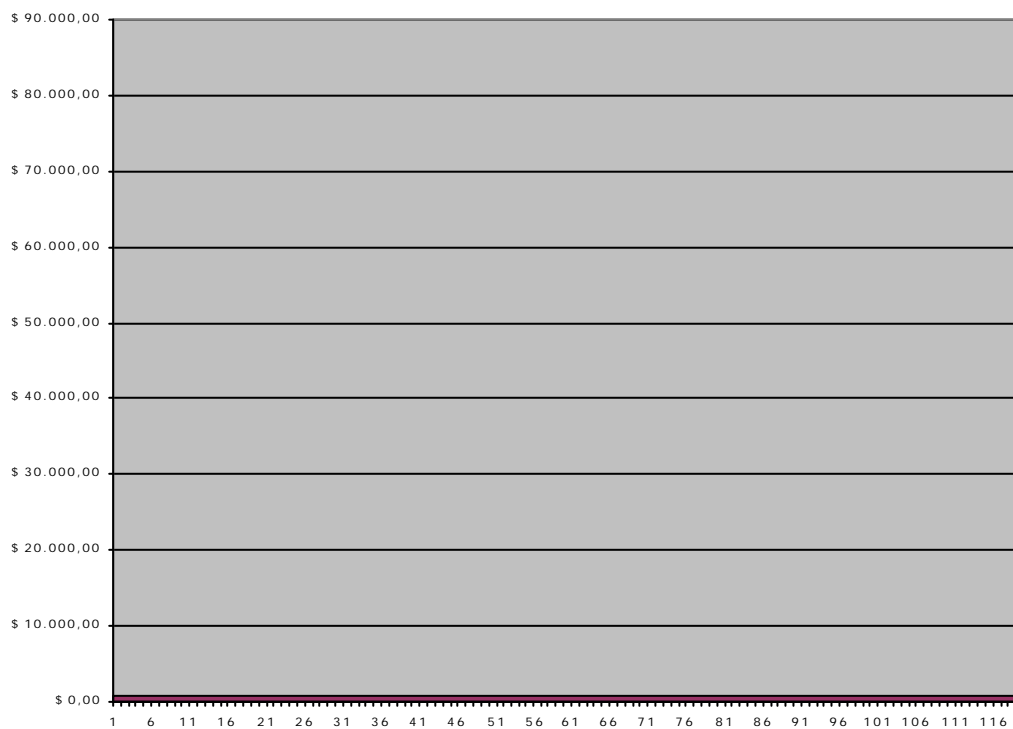
V →  $V_N = \$80000$

N →  $N = 120$

I →  $i = 0.01$

K →  $K = 50$

		Para $K < N$		Para $K = N$	
A	Debe Anterior	80000	V	0	0
B	Amort. Real [ $T_K$ ]	0	0	80000	V
C	Interes Simple [ $I_K$ ]	800	VI	800	VI
D	Cuota [ $C_K$ ]	800	VI	80800	V+VI
E	$\sum(T_K)$	0	0	80000	V
F	$\sum(I_K)$	40000	VIK	96000	VIK
G	$\sum(C_K)$	40000	VIK	176000	V+VIK
H	Deuda	80000	V	0	0






1) Crear 4 Hojas de cálculo:

-  Datos
-  Calc
-  Tabla
-  Gráfico

2) Completar las distintas celdas.

 Datos:

Insertar 5 botones de opción, y vincularlos a =Calc!\$A\$2	<input type="radio"/> ALEMAN <input type="radio"/> ALEMAN INVERSO <input checked="" type="radio"/> FRANCES <input type="radio"/> TASA DIRECTA <input type="radio"/> AMERICANO
E4	$V_N =$
E5	$N =$
E6	$I =$
E7	$K =$
Comb(D10 a G10)	Calcular solo el K....
Comb(D12 a G12)	Calcular lista completa....
Insertar cuadro de grupo	AMORTIZACION
Botón 1	Asignar la macro: K_solo
Botón 2	Asignar la macro: Completa

Llegar a este formato:

AMORTIZACION

$V_N =$  \$ 80.000,00  ALEMAN

$N =$  40  ALEMAN INVERSO

$I =$  0,01  FRANCES

$K =$  30  TASA DIRECTA

AMERICANO

Calcular solo el K

Calcular lista completa



Calc:

A3	ALEMAN
A4	ALEMAN INVESO
A5	FRANCES
A6	TASA DIRECTA
A7	AMERICANO Para K<N
A8	AMERICANO Para K=N
B2	N
B3	=\$A\$14
B4	=\$A\$14
B5	=\$A\$14
B6	=\$A\$14
B7	=\$A\$14
B8	=\$A\$14
C2	Debe Anterior
C3	=(Datos!F4-(A14*(Datos!F4/Datos!F5)))+(Datos!F4/Datos!F5)
C4	=(Datos!F4-(A14*(Datos!F4/Datos!F5)))+(Datos!F4/Datos!F5)
C5	=(Datos!F4-(Datos!F4*((1+Datos!F6)^A14-1)/((1+Datos!F6)^Datos!F5-1))) +(((Datos!F4*Datos!F6)/(1-(1+Datos!F6)^(-Datos!F5))) -((Datos!F4-(Datos!F4*((1+Datos!F6)^(A14-1)-1) /((1+Datos!F6)^Datos!F5-1))) * Datos!F6))
C6	=(Datos!F4-(A14*(Datos!F4/Datos!F5)))+(Datos!F4/Datos!F5)
C7	=Datos!F4
C8	\$ 0,00
D2	Amort. Real [T <sub>K</sub> ]
D3	=Datos!F4/Datos!F5
D4	=Datos!F4/Datos!F5
D5	=(Datos!F4*Datos!F6)/(1-(1+Datos!F6)^(-Datos!F5)) -((Datos!F4-(Datos!F4*((1+Datos!F6)^(A14-1)-1) /((1+Datos!F6)^Datos!F5-1))) * Datos!F6)
D6	=Datos!F4/Datos!F5
D7	\$ 0,00
D8	=Datos!F4



E2	Interes Simple [ $I_k$ ]
E3	$= (\text{Datos!F4} * \text{Datos!F6} * (\text{Datos!F5} - A14 + 1)) / \text{Datos!F5}$
E4	$= \text{Datos!F4} * \text{Datos!F6} * A14 / \text{Datos!F5}$
E5	$= (\text{Datos!F4} - (\text{Datos!F4} * ((1 + \text{Datos!F6})^{(A14 - 1)} - 1) / ((1 + \text{Datos!F6})^{\text{Datos!F5} - 1}))) * \text{Datos!F6}$
E6	$= \text{Datos!F4} * \text{Datos!F6}$
E7	$= \text{Datos!F4} * \text{Datos!F6}$
E8	$= \text{Datos!F4} * \text{Datos!F6}$
F2	Cuota [ $C_k$ ]
F3	$= (\text{Datos!F4} / \text{Datos!F5}) + ((\text{Datos!F4} * \text{Datos!F6} * (\text{Datos!F5} - A14 + 1)) / \text{Datos!F5})$
F4	$= (\text{Datos!F4} / \text{Datos!F5}) + (\text{Datos!F4} * \text{Datos!F6} * A14 / \text{Datos!F5})$
F5	$= (\text{Datos!F4} * \text{Datos!F6}) / (1 - (1 + \text{Datos!F6})^{(-\text{Datos!F5})})$
F6	$= (\text{Datos!F4} / \text{Datos!F5}) + (\text{Datos!F4} * \text{Datos!F6})$
F7	$= \text{Datos!F4} * \text{Datos!F6}$
F8	$= \text{Datos!F4} + \text{Datos!F4} * \text{Datos!F6}$
G2	$\sum (T_k)$
G3	$= A14 * (\text{Datos!F4} / \text{Datos!F5})$
G4	$= A14 * (\text{Datos!F4} / \text{Datos!F5})$
G5	$= \text{Datos!F4} * ((1 + \text{Datos!F6})^{A14 - 1}) / ((1 + \text{Datos!F6})^{\text{Datos!F5} - 1})$
G6	$= A14 * (\text{Datos!F4} / \text{Datos!F5})$
G7	\$ 0,00
G8	$= \text{Datos!F4}$
H2	$\sum (I_k)$
H3	$= A14 * (\text{Datos!F4} * \text{Datos!F6} + ((\text{Datos!F4} * \text{Datos!F6} * (\text{Datos!F5} - A14 + 1)) / \text{Datos!F5})) / 2$
H4	$= A14 * (\text{Datos!F4} * \text{Datos!F6} / \text{Datos!F5} + \text{Datos!F4} * \text{Datos!F6} * A14 / \text{Datos!F5}) / 2$
H5	$= (A14 * ((\text{Datos!F4} * \text{Datos!F6}) / (1 - (1 + \text{Datos!F6})^{(-\text{Datos!F5})}))) - (\text{Datos!F4} * ((1 + \text{Datos!F6})^{A14 - 1}) / ((1 + \text{Datos!F6})^{\text{Datos!F5} - 1}))$
H6	$= A14 * (\text{Datos!F4} * \text{Datos!F6})$
H7	$= \text{Datos!F4} * \text{Datos!F6} * A14$
H8	$= \text{Datos!F4} * \text{Datos!F6} * A14$





I2	$\sum(C_k)$
I3	$= (A14 * (Datos!F4 / Datos!F5)) + (A14 * (Datos!F4 * Datos!F6 + ((Datos!F4 * Datos!F6 * (Datos!F5 - A14 + 1)) / Datos!F5)) / 2)$
I4	$= (A14 * (Datos!F4 / Datos!F5)) + (A14 * (Datos!F4 * Datos!F6 / Datos!F5 + Datos!F4 * Datos!F6 * A14 / Datos!F5) / 2)$
I5	$= A14 * ((Datos!F4 * Datos!F6) / (1 - (1 + Datos!F6)^{-Datos!F5}))$
I6	$= (A14 * (Datos!F4 / Datos!F5)) + (A14 * (Datos!F4 * Datos!F6))$
I7	$= Datos!F4 * Datos!F6 * A14$
I8	$= Datos!F4 + Datos!F4 * Datos!F6 * A14$
J2	Deuda
J3	$= Datos!F4 - (A14 * (Datos!F4 / Datos!F5))$
J4	$= Datos!F4 - (A14 * (Datos!F4 / Datos!F5))$
J5	$= Datos!F4 - (Datos!F4 * ((1 + Datos!F6)^{A14 - 1}) / ((1 + Datos!F6)^{Datos!F5 - 1}))$
J6	$= Datos!F4 - (A14 * (Datos!F4 / Datos!F5))$
J7	$= Datos!F4$
J8	\$ 0,00
A10	$= Datos!F4$
A11	$= Datos!F5$
A12	$= Datos!F6$
A13	$= Datos!F7$
A14	$= A13$
A15	$= CONCATENAR("C3:D"; A16)$
A16	$= A11 + 2$

Tabla:

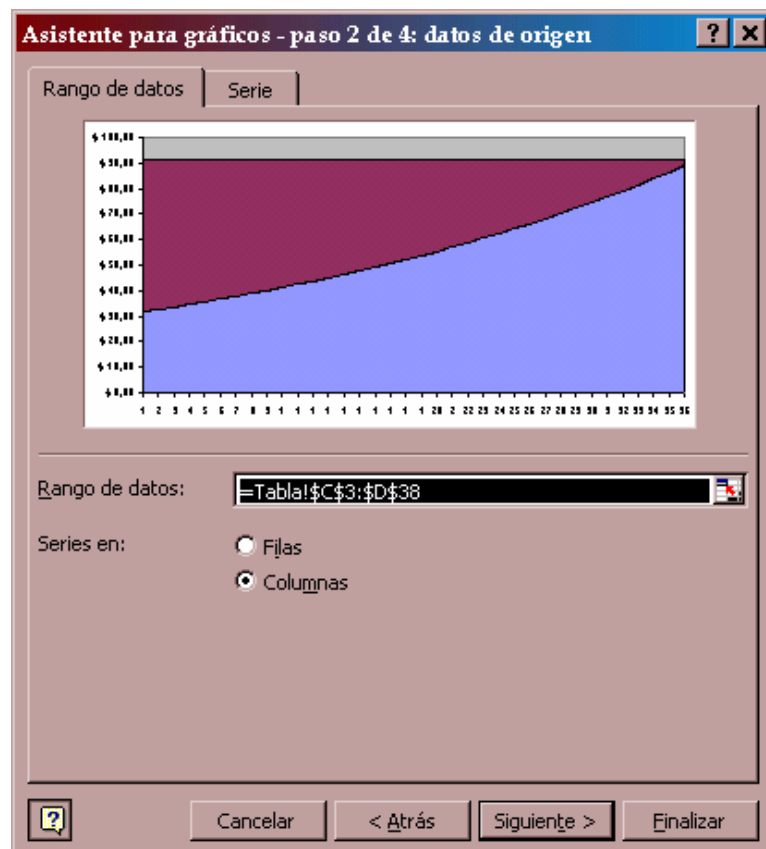
B2	N
C2	Debe Anterior
D2	Amort. Real $[T_k]$
E2	Interes Simple $[I_k]$
F2	Cuota $[C_k]$
G2	$\sum(T_k)$
H2	$\sum(I_k)$
I2	$\sum(C_k)$
J2	Deuda



- Gráfico:
- o Paso 1



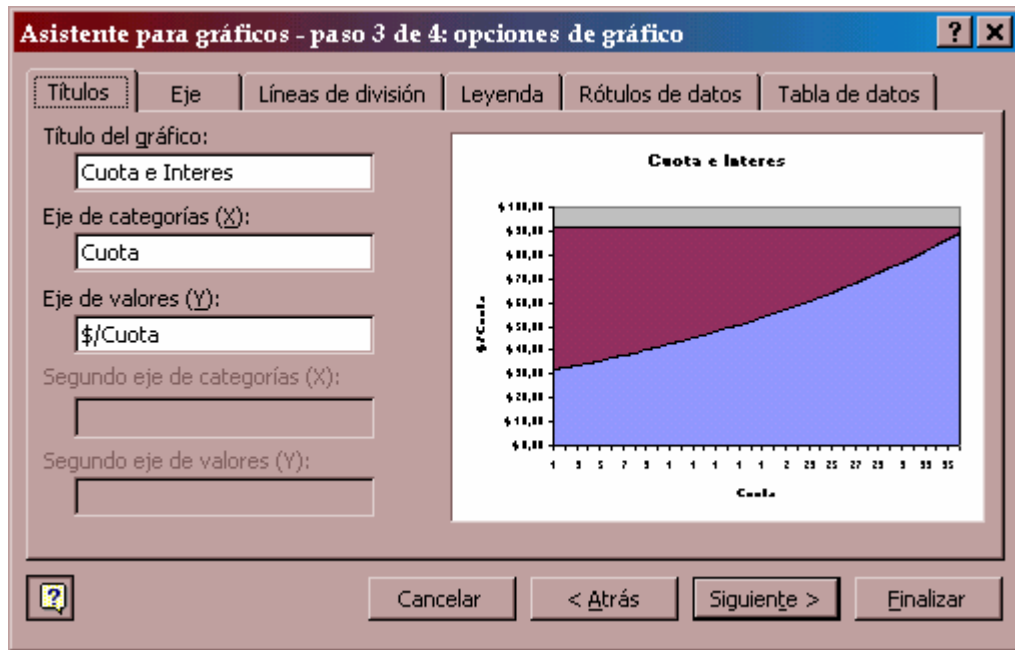
- o Paso 2



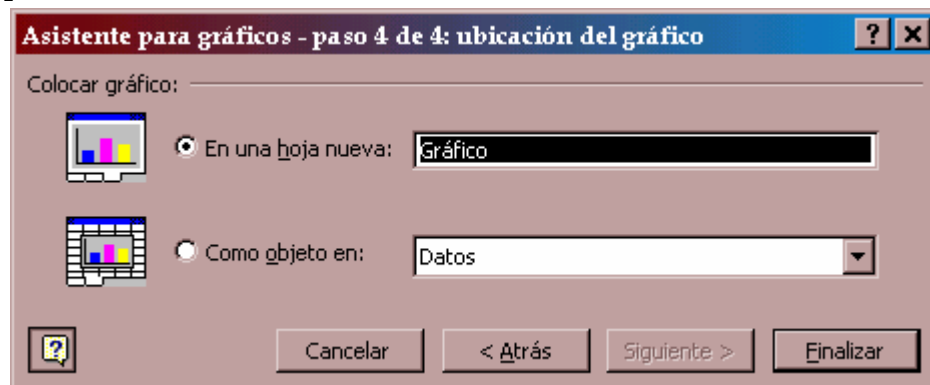
= Tabla!\$C\$3:\$D\$38



Paso 3



o Paso 4





2) Crear los archivos de Visual Basic.

---

### Sub K\_solo()

```
Application.Run "Limpiar"
```

```
' Solo pasar los datos de un K especifico
```

```
Sheets("Calc").Select
```

```
If Range("A2") = 1 Then
```

```
Range("B3:J3").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Range("A3").Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
```

```
:=False, Transpose:=False
```

```
End If
```

```
If Range("A2") = 2 Then
```

```
Range("B4:J4").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Range("A3").Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
```

```
:=False, Transpose:=False
```

```
End If
```

```
If Range("A2") = 3 Then
```

```
Range("B5:J5").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Range("A3").Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
```

```
:=False, Transpose:=False
```

```
End If
```

```
If Range("A2") = 4 Then
```

```
Range("B6:J6").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Range("A3").Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
```

```
:=False, Transpose:=False
```

```
End If
```



```
If Range("A2") = 5 Then
```

```
  Sheets("Calc").Select
```

```
  If Range("A11") > Range("A13") Then
```

```
    Range("B7:J7").Select
```

```
    Selection.Copy
```

```
    Sheets("Tabla").Select
```

```
    Range("A3").Select
```

```
    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
      :=False, Transpose:=False
```

```
  End If
```

```
  Sheets("Calc").Select
```

```
  If Range("A11") = Range("A13") Then
```

```
    Range("B8:J8").Select
```

```
    Selection.Copy
```

```
    Sheets("Tabla").Select
```

```
    Range("A3").Select
```

```
    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
      :=False, Transpose:=False
```

```
  End If
```

```
End If
```

```
  Sheets("Tabla").Select
```

```
  Application.Run "Recuadro1"
```

```
End Sub
```

---



**Sub completa()**

```
Application.Run "Limpiar"
```

```
' Pasa Todos los datos
```

```
Sheets("Calc").Select
```

```
b = Range("A11")
```

```
For a = 1 To b
```

```
Range("A14") = a
```

```
If Range("A2") = 1 Then
```

```
Range("B3:J3").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Cells(a + 2, 1).Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
:=False, Transpose:=False
```

```
Cells(a + 2, 1) = a
```

```
Sheets("Calc").Select
```

```
End If
```

```
If Range("A2") = 2 Then
```

```
Range("B4:J4").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Cells(a + 2, 1).Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
:=False, Transpose:=False
```

```
Cells(a + 2, 1) = a
```

```
Sheets("Calc").Select
```

```
End If
```

```
If Range("A2") = 3 Then
```

```
Range("B5:J5").Select
```

```
Selection.Copy
```

```
Sheets("Tabla").Select
```

```
Cells(a + 2, 1).Select
```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
:=False, Transpose:=False
```

```
Cells(a + 2, 1) = a
```

```
Sheets("Calc").Select
```

```
End If
```



```
If Range("A2") = 4 Then
    Range("B6:J6").Select
    Selection.Copy
    Sheets("Tabla").Select
    Cells(a + 2, 1).Select
    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
        :=False, Transpose:=False
    Cells(a + 2, 1) = a
    Sheets("Calc").Select
End If
```

```
If Range("A2") = 5 Then
```

```
    Sheets("Calc").Select
    If Range("A11") > Range("A14") Then
        Range("B7:J7").Select
        Selection.Copy
        Sheets("Tabla").Select
        Cells(a + 2, 1).Select
        Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
            :=False, Transpose:=False
        Cells(a + 2, 1) = a
        Sheets("Calc").Select
    End If
```

```
    Sheets("Calc").Select
    If Range("A11") = Range("A14") Then
        Range("B8:J8").Select
        Selection.Copy
        Sheets("Tabla").Select
        Cells(a + 2, 1).Select
        Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
            :=False, Transpose:=False
        Cells(a + 2, 1) = a
        Sheets("Calc").Select
    End If
```

```
End If
```

```
Next
```

```
    Range("A14").Select
    ActiveCell.FormulaR1C1 = "=R[-1]C"
    Application.Run "Recuadro2"
    Sheets("Calc").Select
    a = Range("A15")
    Sheets("Gráfico").Select
    ActiveChart.SetSourceData Source:=Sheets("Tabla").Range(a), PlotBy:= _
        xlColumns
```

```
End Sub
```



### Sub Recuadro1()

```
Sheets("Tabla").Select
Range("A3").Select
Range(Selection, Selection.End(xlToRight)).Select
Selection.Borders(xlDiagonalDown).LineStyle = xlNone
Selection.Borders(xlDiagonalUp).LineStyle = xlNone
With Selection.Borders(xlEdgeLeft)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeTop)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeBottom)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeRight)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlInsideVertical)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
```

**End Sub**





### Sub Recuadro2()

```
Sheets("Tabla").Select
Range("A3").Select
Range(Selection, Selection.End(xlToRight)).Select
Range(Selection, Selection.End(xlDown)).Select
Selection.Borders(xlDiagonalDown).LineStyle = xlNone
Selection.Borders(xlDiagonalUp).LineStyle = xlNone
With Selection.Borders(xlEdgeLeft)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeTop)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeBottom)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlEdgeRight)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlInsideVertical)
    .LineStyle = xlContinuous
    .Weight = xlThick
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlInsideHorizontal)
    .LineStyle = xlContinuous
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With

Sheets("Calc").Select
k = Range("A14")
Sheets("Tabla").Select
Cells(k + 2, 1).Select
Range(Selection, Selection.End(xlToRight)).Select
With Selection.Interior
    .ColorIndex = 4
    .Pattern = xlSolid
End With
```

**End Sub**



### Sub Limpiar()

' Limpia los cuadros

```
Sheets("Tabla").Select  
Rows("3:10000").Select  
Selection.ClearContents  
Selection.Interior.ColorIndex = xlNone  
Selection.Borders(xlDiagonalDown).LineStyle = xlNone  
Selection.Borders(xlDiagonalUp).LineStyle = xlNone  
Selection.Borders(xlEdgeLeft).LineStyle = xlNone  
Selection.Borders(xlEdgeTop).LineStyle = xlNone  
Selection.Borders(xlEdgeBottom).LineStyle = xlNone  
Selection.Borders(xlEdgeRight).LineStyle = xlNone  
Selection.Borders(xlInsideVertical).LineStyle = xlNone  
Selection.Borders(xlInsideHorizontal).LineStyle = xlNone
```

**End Sub**