```
Menu("ANOVA USES[D][E]","ONE-WAY ANOVA",P,"RAN BLOCK DESIGN",Q,"2WAY
FACTORIAL",R,"QUIT",S)
Lbl S:Stop
Lbl P
Disp "1. USE A N*2 MAT":Disp "[D],OBSERVATIONS":Disp "IN COL 1, FACTOR":Disp "LEVEL IN COL 2-
":Disp "INTEGERS 1,2..N."
Disp "2. ENTER MEAN,SD":Disp "AND SAMP SIZES."
Pause :ClrHome
Lbl 5:ClrHome
Menu("DATA INPUT WITH","DATA MAT [D]",2,"□1,Sx1,n1,□2..",1,"QUIT",3)
Lbl 3:ClrHome
Stop
Lbl 1:ClrHome
9→F:Disp "HOW MANY LEVELS"
Input N
N→dim(L₄:N→dim(L₅:N→dim(L₆:0→G
0→T
For(I,1,N)
Disp "LEVEL",I:Input "MEAN=?",V:V→L₄(I)
Input "S.D.=?",V:V→L₅(I)
Input "SIZE=?",V:V→L₆(I)
L₆(I)+G→G
L₄(I)*L₆(I)+T→T:End
T/G→M:0→R:0→S
For(I,1,N)
S+(M-L₄(I))²L₆(I)→S:R+(L₅(I))²*(L₆(I)-1)→R:End
S/(N-1)→D
R/(G-N)→E
Goto 4
Lbl 2:ClrHome
1→F:dim([D]:Ans(1)→G:2→N
For(I,1,G)
If [D](I,2)>N
[D](I,2)→N:End
N→dim(L₄:N→dim(L₅:N→dim(L₆:Fill(0,L₄):Fill(0,L₅):Fill(0,L₆):0→T:0→S:{N,4}→dim([E]
For(I,1,G)
T+[D](I,1)→T
S+([D](I,1))²→S:[D](I,2)→B
L₅(B)+1→L₅(B)
L₄(B)+[D](I,1)→L₄(B):L₆(B)+([D](I,1))²→L₆(B):End
S-T²/G→P:0→A
For(I,1,N)
A+(L₄(I))²/L₅(I)→A:End
A-T²/G→S:P-S→R
S/(N-1)→D
R/(G-N)→E
Lbl 4
ClrHome
```

```
Disp "    DF  SS"
Output(2,1,"FAC":Output(2,5,N-1):Output(2,8,S)
Output(3,1,"ERR"):Output(3,5,(G-N)):Output(3,8,R)
Output(5,3,"F="):Output(5,5,round((D/E),2))
Output(6,3,"P="):Fix 3
Output(6,5,round(▫cdf(D/E,▫99,N-1,G-N),3):Float
Output(7,2,"SP="):Output(7,5,√(E):Pause
ClrHome
If F=9:Goto V
Disp "[LEV N MEAN SD]"
For(I,1,N)
I→[E](I,1)
L₅(I)→[E](I,2)
L₄(I)/L₅(I)→M
M→[E](I,3)
(L₆(I)-(L₄(I))²/L₅(I))/(L₅(I)-1)→V
√(V→[E](I,4)
End:Pause [E]
Lbl V:ClrHome
G-N→C
1.96(1+2/(1+8*C))→W
C*(▫^(W*W/C)-1)→C:√(C)→C
C*√(E→W
ClrList L₂,L₃
If 9=F:Then
For(I,1,N,1)
W/√((L₆(I))→Z
L₄(I)-Z→L₂(I)
L₄(I)+Z→L₃(I)
End:Else
For(I,1,N,1)
W/√((L₅(I))→Z
L₄(I)/L₅(I)-Z→L₂(I)
L₄(I)/L₅(I)+Z→L₃(I):End:End
(max(L₃)-min(L₂))/10→W
min(L₂)-W→Xmin
max(L₃)+W→Xmax
0→Xscl:0→Yscl
1→Ymin:192→Ymax:120/(N+1)→H
PlotsOff :FnOff :ClrDraw
Text(1,1,"0.95 CI.S -LEVEL 1 AT TOP")
H+40→Y
For(I,N,1,-1)
Line(L₂(I),Y,L₃(I),Y)
Y+H→Y:End
Trace:Pause
ClrHome:Stop
Lbl Q:ClrHome
```

```
Disp "DATA IN N*3 MAT":Disp "[D].OBSERVATIONS"
Disp "COL 1,COL 2(A)+":Disp "COL 3(B) CONTAIN"
Disp "FACTOR LEVEL AND":Disp "BLOCK-INTEGERS"
Disp "1,2..."
Goto 9
Lbl R:ClrHome
Disp "EQUAL REPLICATES":Disp "DATA IN N*3 MAT ":Disp "[D],1ST COL-DATA":Disp "2ND COL-A
LEVELS":Disp "3RD COL-B LEVELS":Disp "LEVELS-INTEGERS":Disp "STARTING WITH 1."
Lbl 9
Pause :ClrHome
Menu("CONT OR QUIT","CONTINUE",A,"QUIT",B)
Lbl B:ClrHome:Stop
Lbl A
dim([D]:Ans(1)→R:2→K:1→L
For(I,1,R)
If [D](I,3)>K
[D](I,3)→K
If [D](I,2)>L
[D](I,2)→L:End
K→dim(L₆:K→dim(L₅:Fill(0,L₆):Fill(0,L₅):L→dim(L₄:L→dim(L₃:Fill(0,L₄):Fill(0,L₃):0→T:0→S
For(I,1,R)
T+[D](I,1)→T
S+([D](I,1))²→S:[D](I,3)→C
[D](I,2)→D
L₅(C)+1→L₅(C)
L₃(D)+1→L₃(D)
L₆(C)+[D](I,1)→L₆(C):L₄(D)+[D](I,1)→L₄(D):End
S-T²/R→G:0→A
For(I,1,K)
A+(L₆(I))²/L₅(I)→A:End
0→B:For(I,1,L)
B+(L₄(I))²/L₃(I)→B:End
A-T²/R→U
B-T²/R→V
K*L→M:M→dim(L₃
Fill(0,L₃):1→I
For(J,1,K)
For(E,1,L)
For(F,1,R)
If (([D](F,3)=J)*([D](F,2)=E))
L₃(I)+[D](F,1)→L₃(I):End
1+I→I
End:End
0→Q
For(I,1,M)
Q+(L₃(I))²→Q
End
Q/(R/M)-U-V-T²/R→P:G-U-V-P→E
```

```
ClrHome
Disp "   DF   SS"
Output(2,1,"A":Output(2,4,L-1):Output(2,7,V)
Output(3,1,"B":Output(3,4,K-1):Output(3,7,U)
If (R/M)=1:Then:P→E:Output(4,1,"ER"):(K-1)*(L-1)→Z:Goto E:End
Output(4,1,"AB")
Lbl E
Output(4,4,(K-1)*(L-1)):Output(4,7,P):Output(5,1,"   ")
If (R/M)=1
Goto C
Output(5,1,"ER":Output(5,4,(R-K*L)):Output(5,7,E):(R-K*L)→Z
Lbl C
Output(6,4,"F(A)=")
V/(L-1)/(E/Z)→F:Output(6,9,round(F,2)
Output(7,7,"P="):Fix 3
Output(7,9,round(▫cdf(F,▫99,L-1,Z),3):Float
Output(8,4,"F(B)=")
(U/(K-1))/(E/Z)→F:Output(8,9,round(F,2):Pause :ClrHome
Output(1,1,"B     P="):Fix 3
Output(1,9,round(▫cdf(F,▫99,K-1,Z),3):Float
If (R/M)=1
Goto D
Output(2,3,"F(AB)=")
P/((K-1)*(L-1))/(E/(R-K*L))→F
Output(2,9,round(F,2))
Output(3,7,"P="):Fix 3
Output(3,9,round(▫cdf(F,▫99,L-1,R-K*L),3):Float
Lbl D
√((E/Z)→S
Output(5,3,"S=":Output(5,5,S)
Return
```