	grain		centroids	
621-625	D	E	D	E
	1.358	1.009	13.988	49.799
	1.372	1.014	24.162	49.905
	1.376	1.016	24.424	49.961
	1.373	1.017	24.158	49.960
	1.375	1.019	24.177	50.002
	5	5	5	5
$\bar{X}$	1.3708	1.015	24.1818	49.9254
ΣX^2	9.395678	5.151183	2923.894457	12462.75255
ΣX	6.854	5.075	120.909	249.627
611, 14, 15, 16-20				
	1.374	1.017	24.261	50.554
	"	1.008	24.198	49.767
	"	1.011	24.180	49.830
	"	1.015	24.276	50.512
	"	1.013	24.170	49.873
	"	1.014	24.282	50.493
	1.370	1.014	24.226	50.495

$t = r\sqrt{(N-2)/(1-r^2)}$

highest = Ecent / Eg = .99372 2tail α

$t = .99372\sqrt{(5-2)/(1-.99372^2)}$

= 15.3819 < .001

lowest Dc / Eg r = .57194 t = 1.2076 .5 < α < 1

The correct centroids are apparently known
the problem is to select the D & E gain factors

this is a 3 value problem?

GAIN FACTORS CENTROIDS

--D--	--E--	--D---	--E---
1.358	1.009	23.988	49.799
1.372	1.014	24.162	49.905
1.376	1.016	24.424	49.961
1.373	1.017	24.158	49.960
1.375	1.019	24.177	50.002

XBAR= MEANS

1.37080	1.01500	24.18180	49.92540

STD= STANDARD DEVIATIONS

0.00733	0.00381	0.15588	0.07862

RX= SUMS OF CROSS PRODUCTS OF DEVIATIONS FROM MEANS

0.00021	0.00010	0.00364	0.00218
0.00010	0.00006	0.00136	0.00119
0.00364	0.00136	0.09720	0.03233
0.00218	0.00119	0.03233	0.02472

R= CORRELATION COEFFICIENTS

1.000 0.914 1.000 0.797 0.572 1.000 0.944 0.994 0.660 1.000

B= SUMS OF CROSS PRODUCTS

0.00021	0.00006	0.09720	0.02472

FORMATTED MATRIX OF CORRELATIONS

gain D	1.00000	0.91384	0.79745	0.94439
gain E	0.91384	1.00000	0.57194	0.99372
cen D	0.79745	0.57194	1.00000	0.65950
cen E	0.94439	0.99372	0.65950	1.00000
	D	E	D	E
	gain		centroids	

```
CH1 IMPCOR
CH2 CORRELATION FOR IMP GAIN FACTORS
CH5 X             ARRAY OFMEANS
CH5
CH5 M             NUMBER OF VARIABLES
CH5 N             NUMBER OF OBSERVATIONS
      DIMENSION X(5,4),XBAR(4),STD(4),RX(4,4),R(12),B(4),
     *,RSAVE(10)
      DATA X/1.358 ,1.372 ,1.376 ,1.373 ,1.375
     *      ,1.009 ,1.014 ,1.016 ,1.017 ,1.019
     *      ,23.988,24.162,24.424,24.158,24.177
     *      ,49.799,49.905,49.961,49.960,50.002/
      DATA M,N/4,5/
      WRITE(6,100)
      WRITE(6,110) ((X(I,J),J=1,4),I=1,5)
100   FORMAT(1X,'GAIN FACTORS CENTROIDS'/
     *1X,          '--D-- --E-- --D--- --E---')
110   FORMAT((2(1X,F5.3),2(1X,F6.3)))
      CALL CORRE(5,4,1,X,XBAR,STD,RX,R,B,D,T)
      WRITE(6,120) XBAR,STD,RX,R,B
120   FORMAT(1X,'XBAR= MEANS'/4(1X,F12.5)/
     *1X,'STD= STANDARD DEVIATIONS'/4(1X,F12.5)/
     *1X,'RX= SUMS OF CROSS PRODUCTS  OF DEVIATIONS FROM
     *4(4(1X,F12.5)/)/
     *1X,'R= CORRELATION COEFFICIENTS'/12(1X,F5.3)/
     *1X,'B= SUMS OF CROSS PRODUCTS'/4(1X,F12.5))
      WRITE(6,130)
130   FORMAT(1X,'FORMATTED MATRIX OF CORRELATIONS')
      DO 160 I=1,M
         K = 1
         DO 140 J=1,M
              CALL LOC(I,J,IR,M,M,1)
              RSAVE(K) = R(IR)
              K = K + 1
140      CONTINUE
              WRITE(6,150) (RSAVE(L),L=1,M)
150           FORMAT(12(1X,F12.5))
160   CONTINUE
      STOP
      END
      SUBROUTINE  DATA
      RETURN
      END
```