The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
Group	3	A B C
ID	30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time	4	12 18 24 36

Number of Observations Read	120
Number of Observations Used	120

The GLM Procedure

Dependent Variable: Coord

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	38	19839.41667	522.08991	96.91	<.0001
Error	81	436.37500	5.38735		
Corrected Total	119	20275.79167			

R-Square	Coeff Var	Root MSE	Coord Mean
0.978478	3.035726	2.321066	76.45833

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	1031.21667	515.60833	95.71	<.0001
ID(Group)	27	1008.32500	37.34537	6.93	<.0001
Time	3	16842.15833	5614.05278	1042.08	<.0001
Group*Time	6	957.71667	159.61944	29.63	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	1031.21667	515.60833	95.71	<.0001
ID(Group)	27	1008.32500	37.34537	6.93	<.0001
Time	3	16842.15833	5614.05278	1042.08	<.0001
Group*Time	6	957.71667	159.61944	29.63	<.0001

Tests of Hypotheses Using the Type III MS for ID(Group) as an Error Term					
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	1031.216667	515.608333	13.81	<.0001

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
Group	3	A B C

Number of Observations Read	30
Number of Observations Used	30

The GLM Procedure

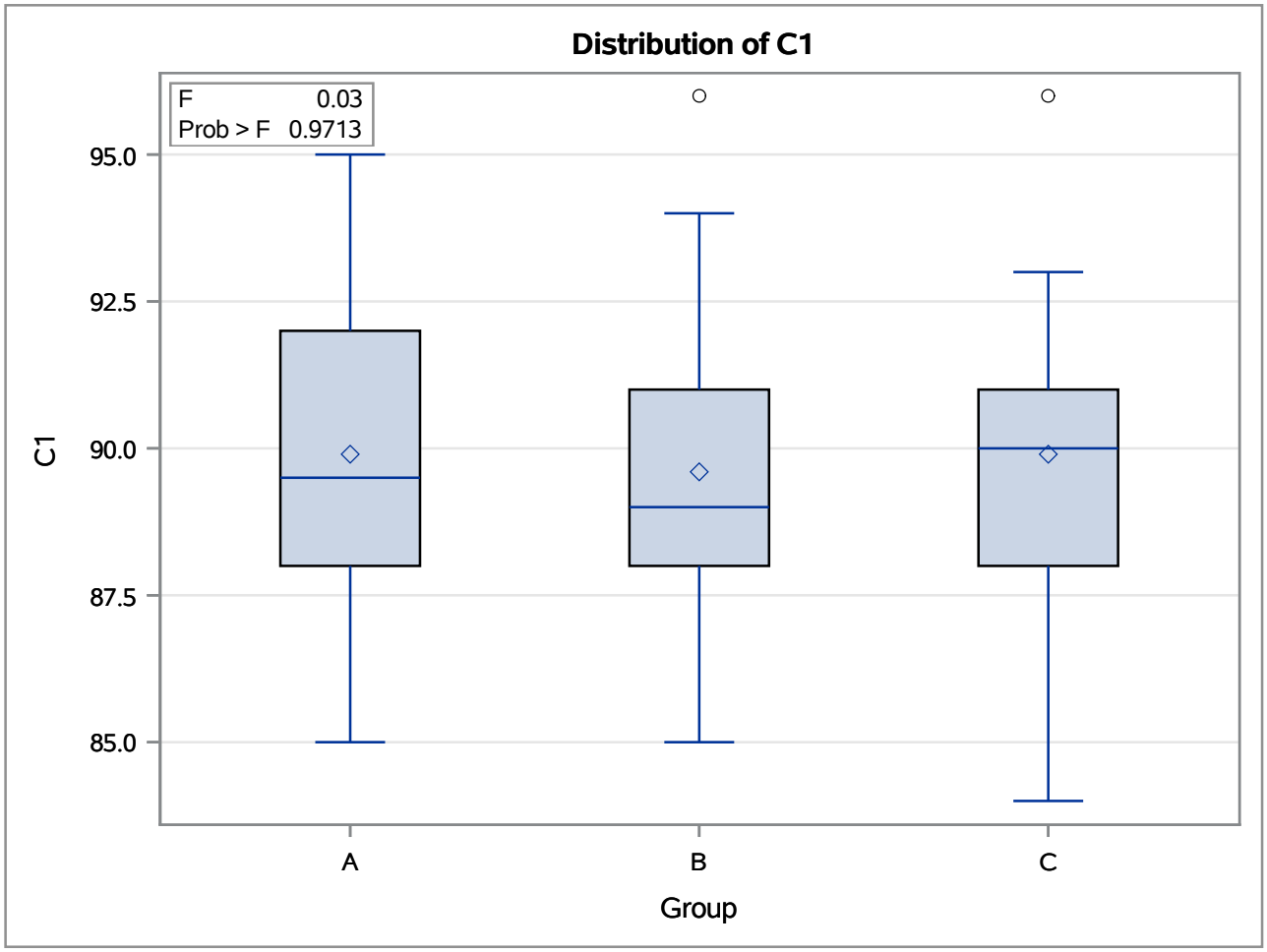
Dependent Variable: C1

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.6000000	0.3000000	0.03	0.9713
Error	27	278.2000000	10.3037037		
Corrected Total	29	278.8000000			

R-Square	Coeff Var	Root MSE	C1 Mean
0.002152	3.574542	3.209938	89.80000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	0.60000000	0.30000000	0.03	0.9713

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	0.60000000	0.30000000	0.03	0.9713



The GLM Procedure

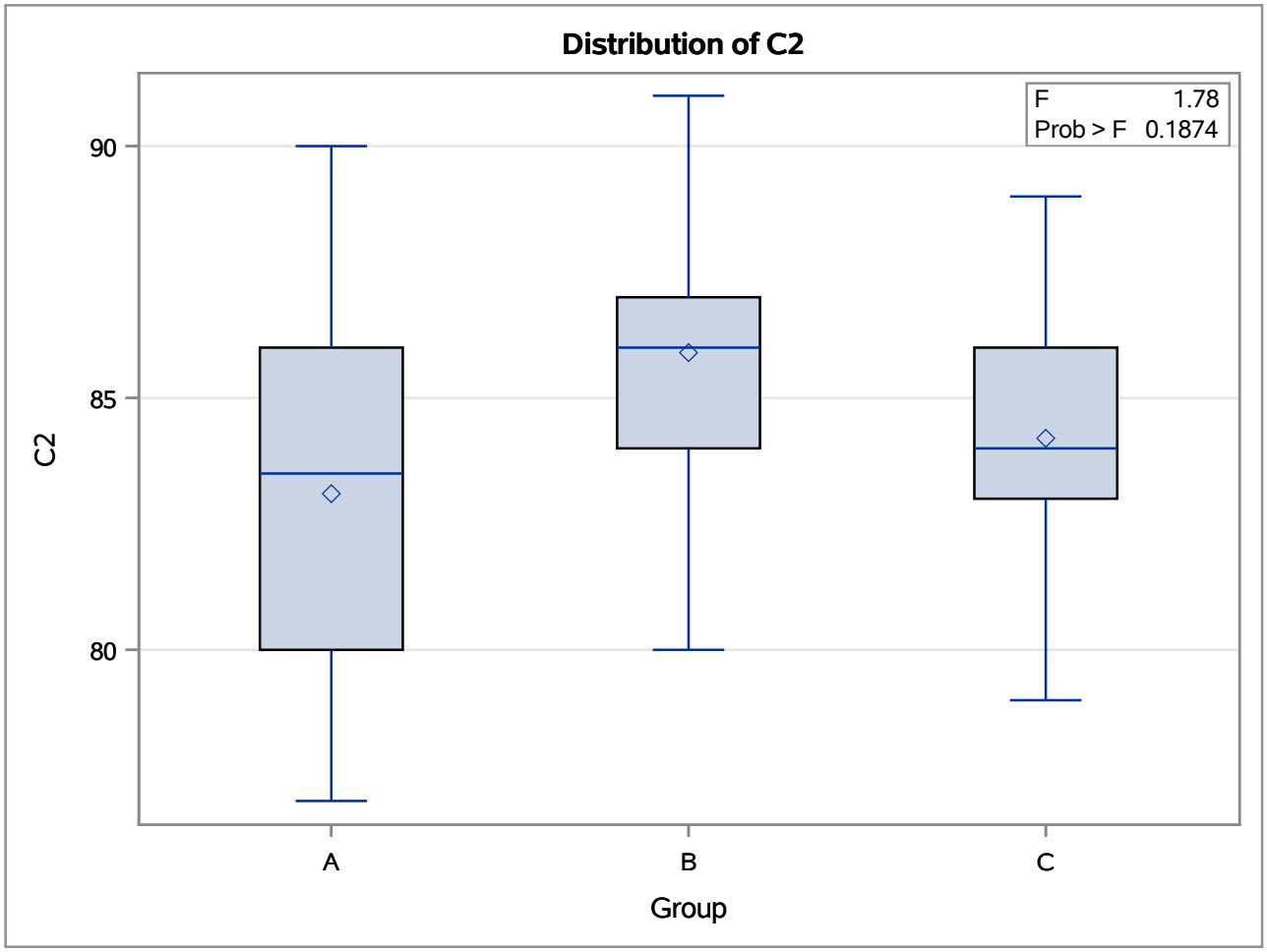
Dependent Variable: C2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	39.8000000	19.9000000	1.78	0.1874
Error	27	301.4000000	11.1629630		
Corrected Total	29	341.2000000			

R-Square	Coeff Var	Root MSE	C2 Mean
0.116647	3.958652	3.341102	84.40000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	39.80000000	19.90000000	1.78	0.1874

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	39.80000000	19.90000000	1.78	0.1874



The GLM Procedure

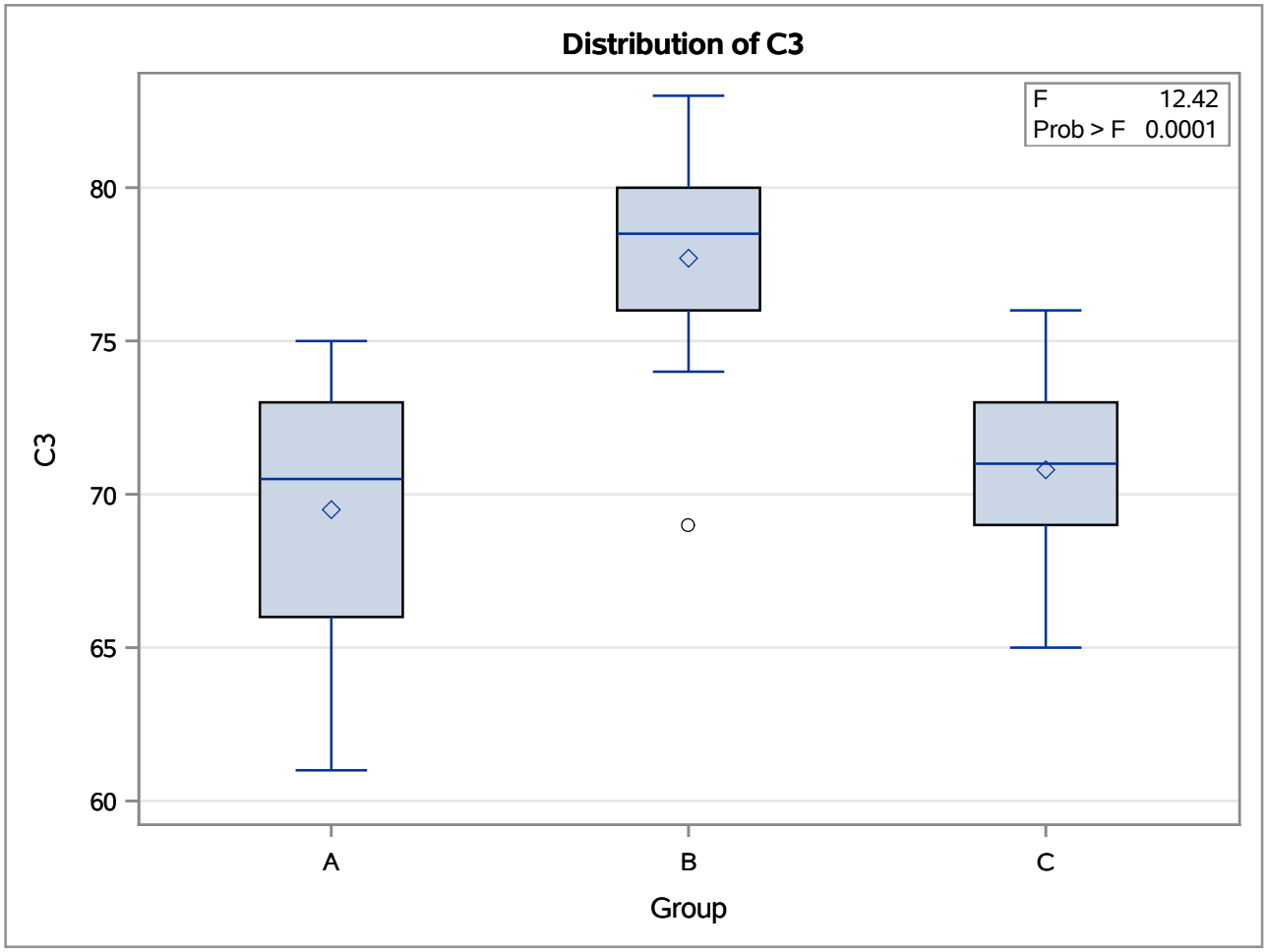
Dependent Variable: C3

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	388.4666667	194.2333333	12.42	0.0001
Error	27	422.2000000	15.6370370		
Corrected Total	29	810.6666667			

R-Square	Coeff Var	Root MSE	C3 Mean
0.479194	5.441793	3.954369	72.66667

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	388.4666667	194.2333333	12.42	0.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	388.4666667	194.2333333	12.42	0.0001



The GLM Procedure

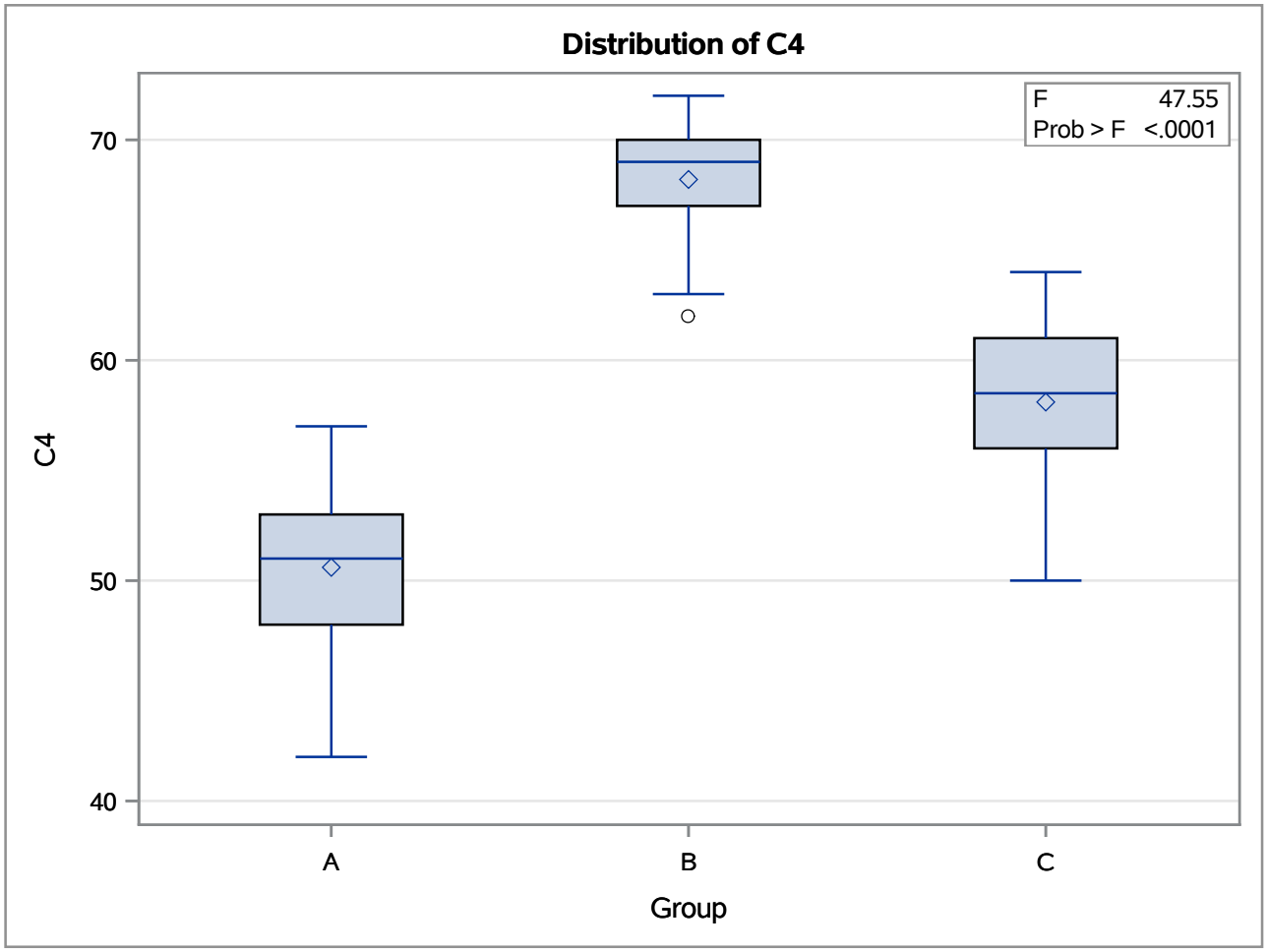
Dependent Variable: C4

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1560.066667	780.033333	47.55	<.0001
Error	27	442.900000	16.403704		
Corrected Total	29	2002.966667			

R-Square	Coeff Var	Root MSE	C4 Mean
0.778878	6.868539	4.050149	58.96667

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	1560.066667	780.033333	47.55	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Group	2	1560.066667	780.033333	47.55	<.0001



The GLM Procedure
Multivariate Analysis of Variance

M Matrix Describing Transformed Variables				
	C1	C2	C3	C4
MVAR1	-1	1	0	0
MVAR2	0	-1	1	0
MVAR3	0	0	-1	1

E = Error SSCP Matrix			
	MVAR1	MVAR2	MVAR3
MVAR1	63.8	12	-33.6
MVAR2	12	246.4	-37.2
MVAR3	-33.6	-37.2	245.5

Partial Correlation Coefficients from the Error SSCP Matrix of the Variables Defined by the Specified Transformation / Prob > |r|			
DF = 27	MVAR1	MVAR2	MVAR3
MVAR1	1.000000	0.095709 0.6281	-0.268475 0.1672
MVAR2	0.095709 0.6281	1.000000	-0.151251 0.4423
MVAR3	-0.268475 0.1672	-0.151251 0.4423	1.000000

The GLM Procedure
Multivariate Analysis of Variance

H = Type III SSCP Matrix for Group			
	MVAR1	MVAR2	MVAR3
MVAR1	49.4	91.2	141.2
MVAR2	91.2	187.46666667	228.8
MVAR3	141.2	228.8	456.8

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Group
E = Error SSCP Matrix

Variables have been transformed by the M Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1		
		MVAR1	MVAR2	MVAR3
4.25818720	95.42	0.07703983	0.02882387	0.05617072
0.20455826	4.58	0.00748625	0.04971257	-0.03163217
0.00000000	0.00	-0.10467602	0.02941529	0.01762267

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall Group Effect
on the Variables Defined by the M Matrix Transformation
H = Type III SSCP Matrix for Group
E = Error SSCP Matrix

S=2 M=0 N=11.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.15788328	12.64	6	50	<.0001
Pillai's Trace	0.97964053	8.32	6	52	<.0001
Hotelling-Lawley Trace	4.46274546	18.26	6	31.616	<.0001
Roy's Greatest Root	4.25818720	36.90	3	26	<.0001

NOTE: F Statistic for Roy's Greatest Root is an upper bound.

NOTE: F Statistic for Wilks' Lambda is exact.

The GLM Procedure
Multivariate Analysis of Variance

M Matrix Describing Transformed Variables				
	C1	C2	C3	C4
MVAR1	1	1	1	1

E = Error SSCP Matrix	
	MVAR1
MVAR1	4033.3

The GLM Procedure
Multivariate Analysis of Variance

H = Type III SSCP Matrix for Group	
	MVAR1
MVAR1	4124.8666667

Characteristic Roots and Vectors of: E Inverse * H, where H = Type III SSCP Matrix for Group E = Error SSCP Matrix Variables have been transformed by the M Matrix		
		Characteristic Vector V'EV=1
Characteristic Root	Percent	MVAR1
1.02270267	100.00	0.01574598

MANOVA Test Criteria and Exact F Statistics for the Hypothesis of No Overall Group Effect on the Variables Defined by the M Matrix Transformation H = Type III SSCP Matrix for Group E = Error SSCP Matrix S=1 M=0 N=12.5					
Statistic	**Value**	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Wilks' Lambda	0.49438804	13.81	2	27	<.0001
Pillai's Trace	0.50561196	13.81	2	27	<.0001
Hotelling-Lawley Trace	1.02270267	13.81	2	27	<.0001
Roy's Greatest Root	1.02270267	13.81	2	27	<.0001

The MEANS Procedure

Group=A Time=12

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	89.9000000	2.9608557	85.0000000	95.0000000

Group=A Time=18

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	83.1000000	3.9567102	77.0000000	90.0000000

Group=A Time=24

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	69.5000000	4.3269183	61.0000000	75.0000000

Group=A Time=36

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	50.6000000	4.5752960	42.0000000	57.0000000

Group=B Time=12

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	89.6000000	3.3730962	85.0000000	96.0000000

Group=B Time=18

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	85.9000000	3.1780497	80.0000000	91.0000000

Group=B Time=24

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	77.7000000	3.9454615	69.0000000	83.0000000

The MEANS Procedure

Group=B Time=36

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	68.2000000	3.3928028	62.0000000	72.0000000

Group=C Time=12

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	89.9000000	3.2812599	84.0000000	96.0000000

Group=C Time=18

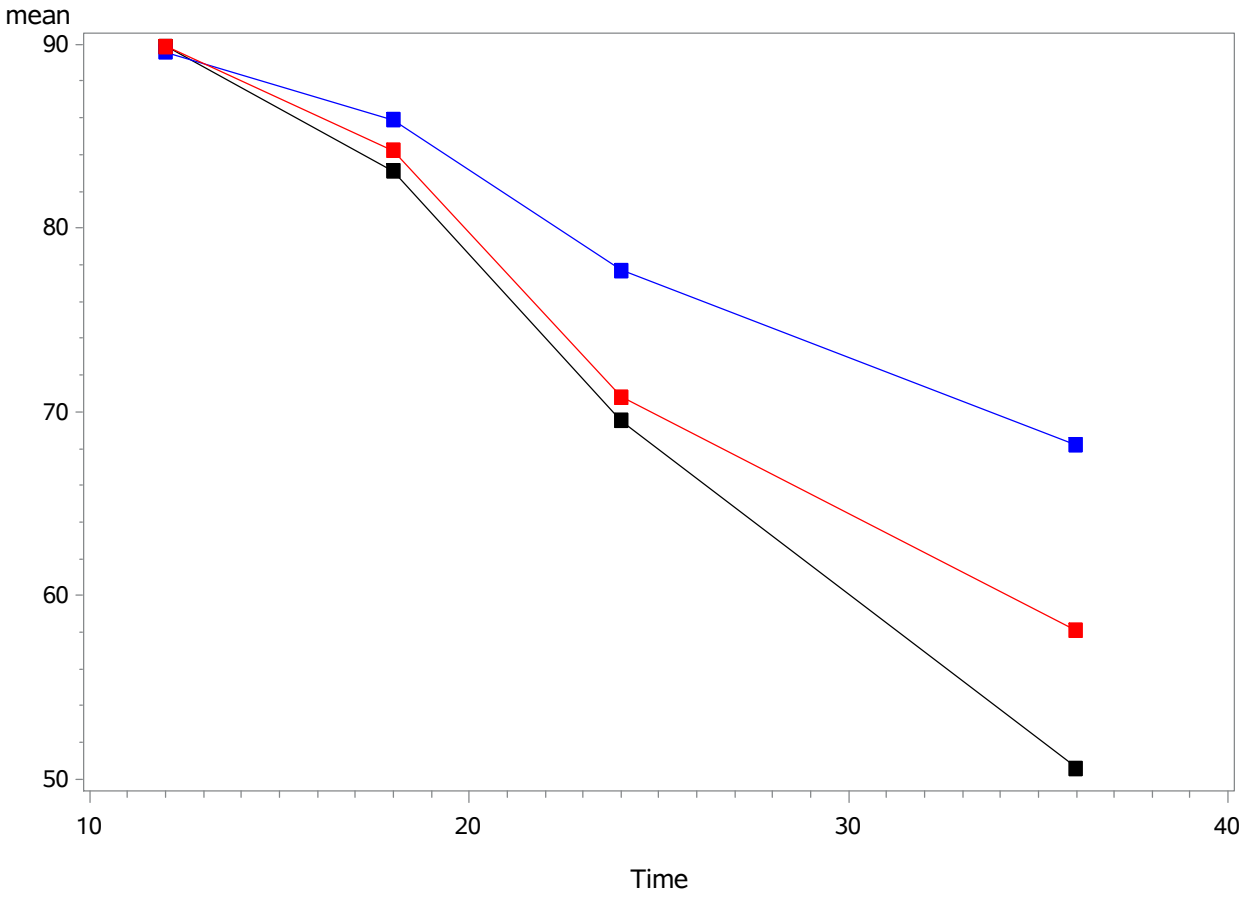
Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	84.2000000	2.7808871	79.0000000	89.0000000

Group=C Time=24

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	70.8000000	3.5527767	65.0000000	76.0000000

Group=C Time=36

Analysis Variable : Coord				
N	Mean	Std Dev	Minimum	Maximum
10	58.1000000	4.0947120	50.0000000	64.0000000


mean
90
80
70
60
50
10
20
30
40
Time
Group
A
B
C