The CLUSTER Procedure
Ward's Minimum Variance Cluster Analysis

Eigenvalues of the Covariance Matrix			
	Eigenvalue	Difference	Proportion	Cumulative
1	18.3343092	16.8471899	0.9250	0.9250
2	1.4871194		0.0750	1.0000

Root-Mean-Square Total-Sample Standard Deviation	3.148129

Root-Mean-Square Distance Between Observations	6.296257

Cluster History					
Number of Clusters	Clusters Joined		Freq	Semipartial R-Square	R-Square	Tie
7	1	7	2	0.0036	.996	
6	2	3	2	0.0072	.989	T
5	4	5	2	0.0144	.975	
4	CL7	8	3	0.0156	.959	
3	CL4	CL6	5	0.0428	.916	
2	CL5	6	3	0.0817	.835	
1	CL3	CL2	8	0.8347	.000	

The CLUSTER Procedure
Ward's Minimum Variance Cluster Analysis
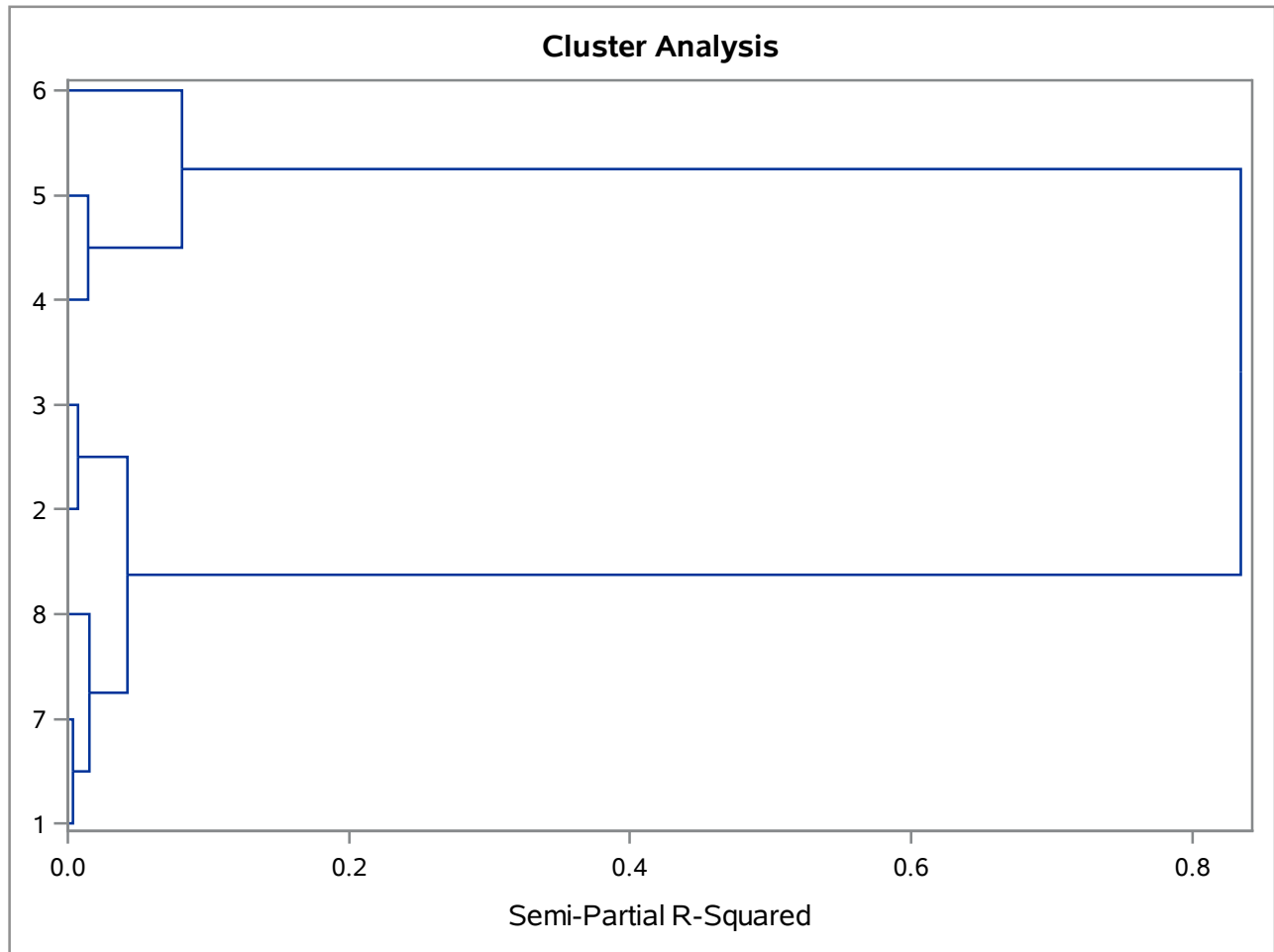
Scatter plot of the points
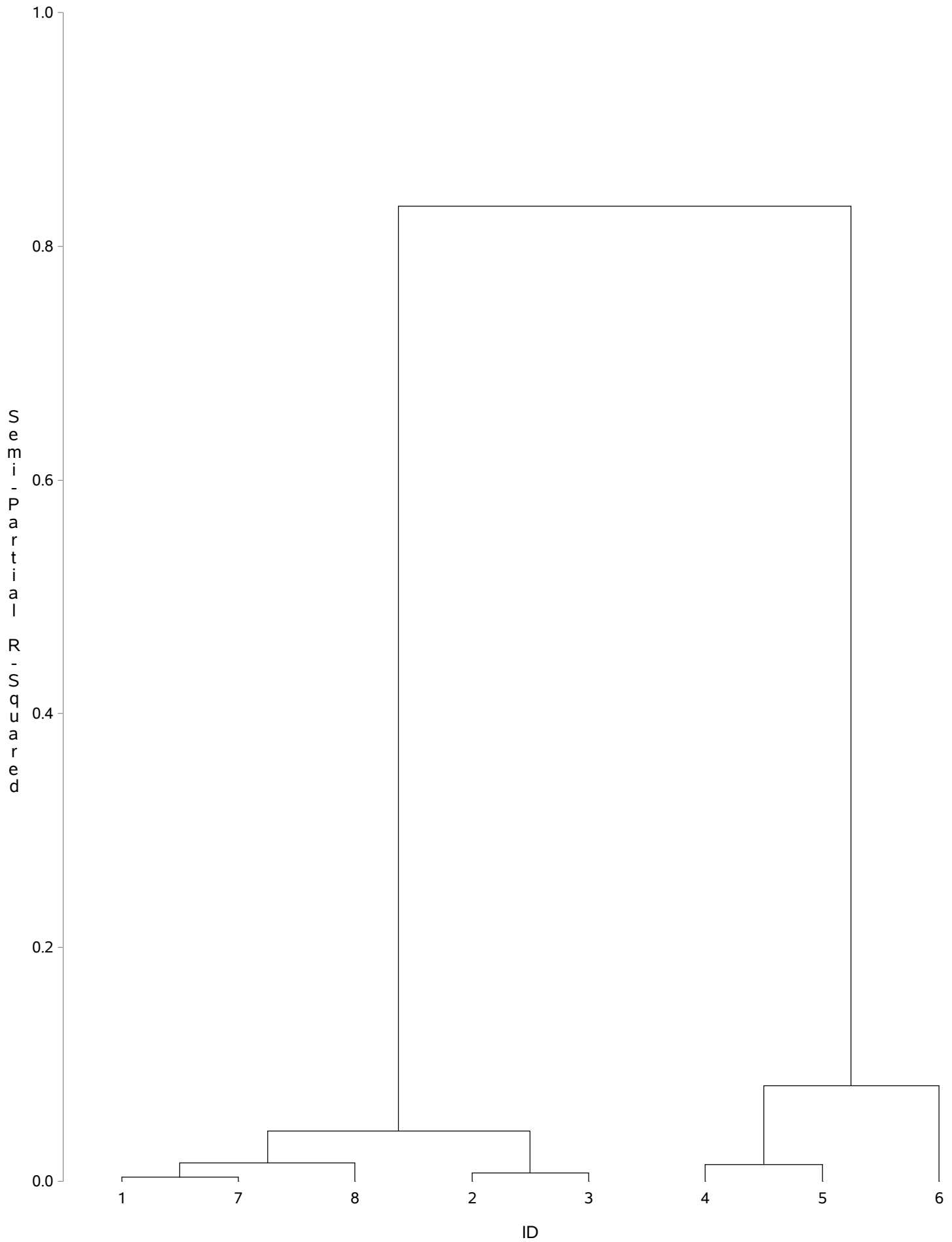
Scatter plot of the points
cluster solution

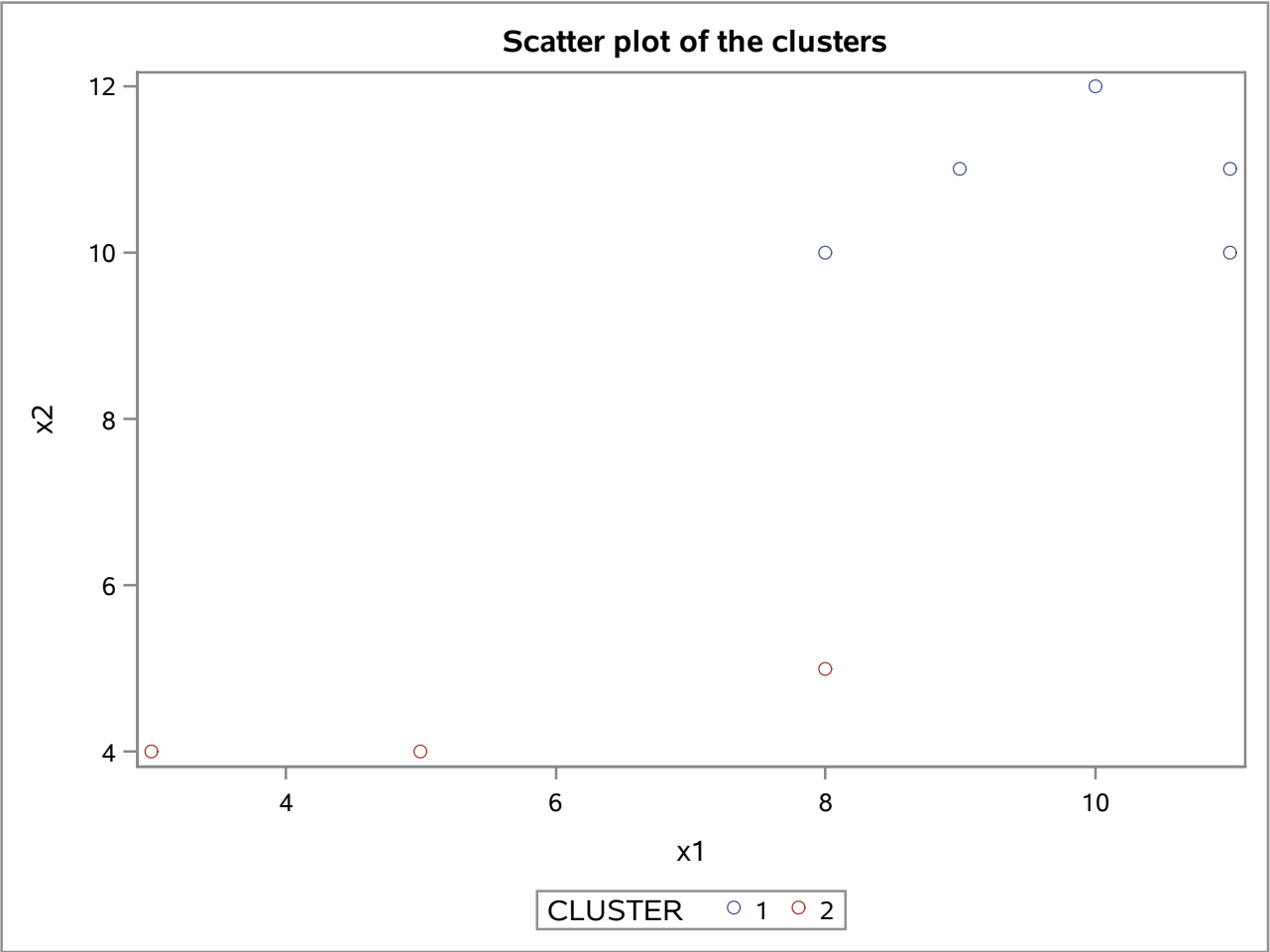## CLUSTER=1

Obs	ID	x1	x2
1	1	11	10
2	7	11	11
3	2	8	10
4	3	9	11
5	8	10	12

CLUSTER=2

Obs	ID	x1	x2
6	4	5	4
7	5	3	4
8	6	8	5

Scatter plot of the clusters

The FASTCLUS Procedure
Replace=FULL Radius=0 Maxclusters=2 Maxiter=100 Converge=0.02

Initial Seeds		
Cluster	x1	x2
1	1.008616722	0.767542922
2	-1.797968940	-1.279238204

Minimum Distance Between Initial Seeds =	3.473649

Iteration History			
		Relative Change in Cluster Seeds	
Iteration	Criterion	1	2
1	0.5934	0.1224	0.2373
2	0.4102	0	0

Convergence criterion is satisfied.

Criterion Based on Final Seeds =	0.4102

Cluster Summary						
Cluster	Frequency	RMS Std Deviation	Maximum Distance from Seed to Observation	Radius Exceeded	Nearest Cluster	Distance Between Cluster Centroids
1	5	0.3668	0.6734		2	2.4558
2	3	0.6356	0.9556		1	2.4558

Statistics for Variables				
Variable	Total STD	Within STD	R-Square	RSQ/(1-RSQ)
x1	1.00000	0.63191	0.657729	1.921661
x2	1.00000	0.22226	0.957659	22.617788
OVER-ALL	1.00000	0.47366	0.807694	4.200045

Pseudo F Statistic =	25.20

Approximate Expected Over-All R-Squared =	.

Cubic Clustering Criterion =	.

WARNING: The two values above are invalid for correlated variables.

The FASTCLUS Procedure
Replace=FULL Radius=0 Maxclusters=2 Maxiter=100 Converge=0.02

Cluster Means		
Cluster	**x1**	**x2**
1	0.587628873	0.709063461
2	-0.979381455	-1.181772436

Cluster Standard Deviations		
Cluster	**x1**	**x2**
1	0.4574174999	0.2446371359
2	0.8828857115	0.1688156620

Scatter plot of the clusters