

Obs	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
1	1	5.1	3.5	1.4	0.2	Iris-setosa
2	2	4.9	3	1.4	0.2	Iris-setosa
3	3	4.7	3.2	1.3	0.2	Iris-setosa
4	4	4.6	3.1	1.5	0.2	Iris-setosa
5	5	5	3.6	1.4	0.2	Iris-setosa
6	6	5.4	3.9	1.7	0.4	Iris-setosa
7	7	4.6	3.4	1.4	0.3	Iris-setosa
8	8	5	3.4	1.5	0.2	Iris-setosa
9	9	4.4	2.9	1.4	0.2	Iris-setosa
10	10	4.9	3.1	1.5	0.1	Iris-setosa
11	11	5.4	3.7	1.5	0.2	Iris-setosa
12	12	4.8	3.4	1.6	0.2	Iris-setosa
13	13	4.8	3	1.4	0.1	Iris-setosa
14	14	4.3	3	1.1	0.1	Iris-setosa
15	15	5.8	4	1.2	0.2	Iris-setosa

**The MEANS Procedure**

<b>Variable</b>	<b>N</b>	<b>N Miss</b>	<b>Mean</b>	<b>Median</b>	<b>Maximum</b>	<b>Minimum</b>
SepalLengthCm	150	0	5.8433333	5.8000000	7.9000000	4.3000000
SepalWidthCm	150	0	3.0540000	3.0000000	4.4000000	2.0000000
PetalLengthCm	150	0	3.7586667	4.3500000	6.9000000	1.0000000
PetalWidthCm	150	0	1.1986667	1.3000000	2.5000000	0.1000000

### The CLUSTER Procedure Centroid Hierarchical Cluster Analysis

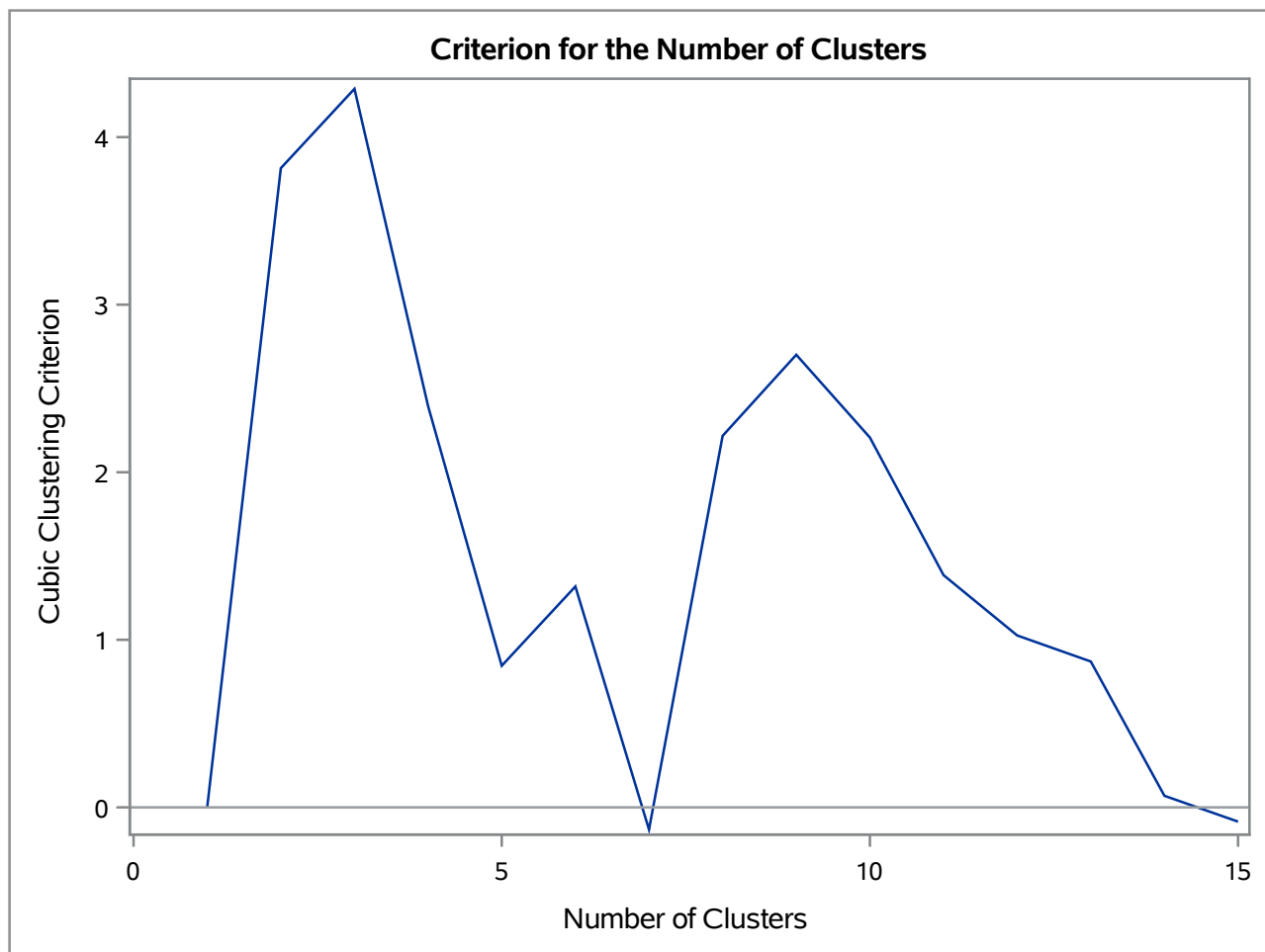
Eigenvalues of the Covariance Matrix				
	Eigenvalue	Difference	Proportion	Cumulative
1	4.22484077	3.98259720	0.9246	0.9246
2	0.24224357	0.16371966	0.0530	0.9776
3	0.07852391	0.05484088	0.0172	0.9948
4	0.02368303		0.0052	1.0000

Root-Mean-Square Total-Sample Standard Deviation	1.068795
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Root-Mean-Square Distance Between Observations	3.023009
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Cluster History									
Number of Clusters	Clusters Joined		Freq	Semipartial R-Square	R-Square	Approximate Expected R-Square	Cubic Clustering Criterion	Norm Centroid Distance	Tie
15	CL23	CL24	34	0.0069	.958	.958	-.09	0.2471	
14	CL15	CL21	37	0.0020	.956	.955	0.07	0.2344	
13	OB109	OB135	2	0.0004	.955	.953	0.87	0.2497	
12	CL16	CL13	24	0.0018	.953	.950	1.03	0.2726	
11	CL18	CL39	9	0.0020	.951	.946	1.39	0.2754	
10	OB110	CL46	3	0.0007	.951	.942	2.21	0.2889	
9	CL11	CL10	12	0.0025	.948	.936	2.70	0.289	
8	CL20	CL33	49	0.0075	.941	.930	2.22	0.3055	
7	CL14	CL17	59	0.0198	.921	.921	-.13	0.3271	
6	CL7	OB107	60	0.0020	.919	.910	1.32	0.3879	
5	CL12	CL9	36	0.0173	.901	.895	0.84	0.4019	
4	CL8	OB42	50	0.0023	.899	.872	2.39	0.4183	
3	CL6	CL28	64	0.0159	.883	.827	4.29	0.5619	
2	CL3	CL5	100	0.1109	.772	.697	3.81	0.5988	
1	CL4	CL2	150	0.7723	.000	.000	0.00	1.3138	

**The CLUSTER Procedure**  
**Centroid Hierarchical Cluster Analysis**



**The CLUSTER Procedure**  
**Centroid Hierarchical Cluster Analysis**



### The CANDISC Procedure

<b>Total Sample Size</b>	150	<b>DF Total</b>	149
<b>Variables</b>	2	<b>DF Within Classes</b>	147
<b>Classes</b>	3	<b>DF Between Classes</b>	2

<b>Number of Observations Read</b>	150
<b>Number of Observations Used</b>	150

Class Level Information				
CLUSTER	Variable Name	Frequency	Weight	Proportion
1	1	50	50.0000	0.333333
2	2	64	64.0000	0.426667
3	3	36	36.0000	0.240000

### The CANDISC Procedure

Multivariate Statistics and F Approximations					
S=2 M=-0.5 N=72					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.08299751	180.39	4	292	<.0001
Pillai's Trace	0.98119026	70.79	4	294	<.0001
Hotelling-Lawley Trace	10.27518383	374.20	4	174.17	<.0001
Roy's Greatest Root	10.19935849	749.65	2	147	<.0001
NOTE: F Statistic for Roy's Greatest Root is an upper bound.					
NOTE: F Statistic for Wilks' Lambda is exact.					



## The CANDISC Procedure

	Canonical Correlation	Adjusted Canonical Correlation	Approximate Standard Error	Squared Canonical Correlation	Eigenvalues of $\text{Inv}(\mathbf{E})^*\mathbf{H} = \text{CanRs}q/(1-\text{CanRs}q)$			
					Eigenvalue	Difference	Proportion	Cumulative
1	0.954311	0.953964	0.007315	0.910709	10.1994	10.1235	0.9926	0.9926
2	0.265483	.	0.076149	0.070481	0.0758		0.0074	1.0000

Test of H0: The canonical correlations in the current row and all that follow are zero					
	Likelihood Ratio	Approximate F Value	Num DF	Den DF	Pr > F
1	0.08299751	180.39	4	292	<.0001
2	0.92951892	11.15	1	147	0.0011

### The CANDISC Procedure

Total Canonical Structure		
Variable	Can1	Can2
PetalWidthCm	0.995212	-0.097745
SepalLengthCm	0.870268	0.492579

Between Canonical Structure		
Variable	Can1	Can2
PetalWidthCm	0.999627	-0.027313
SepalLengthCm	0.987829	0.155543

Pooled Within Canonical Structure		
Variable	Can1	Can2
PetalWidthCm	0.953282	-0.302082
SepalLengthCm	0.480292	0.877109

### The CANDISC Procedure

Total-Sample Standardized Canonical Coefficients		
Variable	Can1	Can2
PetalWidthCm	2.846133635	-1.558500647
SepalLengthCm	0.564772515	1.782253177

Pooled Within-Class Standardized Canonical Coefficients		
Variable	Can1	Can2
PetalWidthCm	0.8938965576	-.4894845226
SepalLengthCm	0.3078642569	0.9715275358

Raw Canonical Coefficients		
Variable	Can1	Can2
PetalWidthCm	3.729402575	-2.042165644
SepalLengthCm	0.682037939	2.152307788

Class Means on Canonical Variables		
CLUSTER	Can1	Can2
1	-4.131429426	0.147388413
2	0.955429658	-0.305067366
3	4.039554811	0.337635855

