The CLUSTER Procedure
Average Linkage Cluster Analysis

Eigenvalues of the Covariance Matrix				
	Eigenvalue	Difference	Proportion	Cumulative
1	13344.0916	13343.9681	1.0000	1.0000
2	0.1234		0.0000	1.0000

Root-Mean-Square Total-Sample Standard Deviation	81.68297

Root-Mean-Square Distance Between Observations	163.3659

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
399	OB3	OB11	2	0	T
398	OB25	OB32	2	0	T
397	CL399	OB34	3	0	T
396	OB23	OB60	2	0	T
395	OB65	OB74	2	0	T
394	CL397	OB78	4	0	T
393	OB28	OB121	2	0	T
392	OB15	OB138	2	0	T
391	OB133	OB144	2	0	T
390	CL391	OB145	3	0	T
389	OB47	OB154	2	0	T
388	OB107	OB163	2	0	T
387	CL392	OB166	3	0	T
386	CL387	OB183	4	0	T
385	CL386	OB203	5	0	T
384	OB196	OB220	2	0	T
383	OB159	OB237	2	0	T
382	OB258	OB264	2	0	T
381	CL389	OB306	3	0	T
380	OB2	OB312	2	0	T
379	OB221	OB320	2	0	T
378	OB56	OB331	2	0	T
377	OB218	OB335	2	0	T
376	OB142	OB354	2	0	T
375	OB31	OB355	2	0	T
374	OB253	OB361	2	0	T
373	OB77	OB365	2	0	T
372	CL395	OB369	3	0	T
371	OB176	OB374	2	0	T
370	OB368	OB377	2	0	T
369	CL394	OB378	5	0	T
368	OB362	OB382	2	0	T
367	OB90	OB384	2	0	T
366	OB80	OB396	2	0	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
365	OB381	OB399	2	0	T
364	OB205	OB400	2	0	T
363	OB55	OB96	2	0.0001	T
362	OB16	OB110	2	0.0001	T
361	CL366	OB116	3	0.0001	T
360	OB48	OB124	2	0.0001	T
359	OB9	OB126	2	0.0001	T
358	OB61	OB131	2	0.0001	T
357	OB62	OB137	2	0.0001	T
356	OB66	OB140	2	0.0001	T
355	OB73	OB147	2	0.0001	T
354	OB19	OB151	2	0.0001	T
353	OB141	OB153	2	0.0001	T
352	OB98	OB158	2	0.0001	T
351	OB91	OB160	2	0.0001	T
350	OB88	OB195	2	0.0001	T
349	OB165	OB231	2	0.0001	T
348	OB192	OB235	2	0.0001	T
347	OB178	OB244	2	0.0001	T
346	OB93	OB246	2	0.0001	T
345	OB30	OB257	2	0.0001	T
344	OB143	CL382	3	0.0001	T
343	OB103	OB266	2	0.0001	T
342	OB199	OB268	2	0.0001	T
341	OB251	OB274	2	0.0001	T
340	OB102	OB278	2	0.0001	T
339	OB105	OB281	2	0.0001	T
338	OB95	OB283	2	0.0001	T
337	OB87	OB286	2	0.0001	T
336	OB222	OB304	2	0.0001	T
335	OB209	OB307	2	0.0001	T
334	OB210	OB308	2	0.0001	T
333	OB130	OB321	2	0.0001	T
332	OB302	OB332	2	0.0001	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
331	OB129	OB339	2	0.0001	T
330	OB50	OB349	2	0.0001	T
329	OB89	OB357	2	0.0001	T
328	OB299	CL368	3	0.0001	T
327	OB46	OB364	2	0.0001	T
326	CL375	OB371	3	0.0001	T
325	OB328	OB376	2	0.0001	T
324	OB97	OB390	2	0.0001	T
323	OB79	OB309	2	0.0001	T
322	CL354	OB70	3	0.0001	T
321	CL324	OB162	3	0.0001	T
320	CL362	OB229	3	0.0001	T
319	CL347	OB252	3	0.0001	T
318	CL353	OB271	3	0.0001	T
317	CL346	OB370	3	0.0001	T
316	OB170	CL342	3	0.0001	T
315	CL328	OB383	4	0.0001	T
314	OB81	OB99	2	0.0001	T
313	OB43	OB161	2	0.0001	T
312	OB12	OB167	2	0.0001	T
311	OB1	OB194	2	0.0001	T
310	OB187	CL384	3	0.0001	T
309	OB127	OB215	2	0.0001	T
308	OB120	OB217	2	0.0001	T
307	OB82	OB236	2	0.0001	T
306	OB228	OB245	2	0.0001	T
305	OB207	OB255	2	0.0001	T
304	OB52	OB262	2	0.0001	T
303	OB173	OB269	2	0.0001	T
302	OB185	OB270	2	0.0001	T
301	OB275	OB284	2	0.0001	T
300	OB230	OB300	2	0.0001	T
299	OB234	OB324	2	0.0001	T
298	OB40	OB325	2	0.0001	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
297	OB42	OB329	2	0.0001	T
296	OB155	OB336	2	0.0001	T
295	CL383	OB340	3	0.0001	T
294	OB323	OB346	2	0.0001	T
293	OB291	OB352	2	0.0001	T
292	OB4	OB389	2	0.0001	T
291	OB33	OB393	2	0.0001	T
290	OB156	OB188	2	0.0001	T
289	OB27	CL370	3	0.0001	T
288	CL363	CL341	4	0.0001	T
287	CL330	OB152	3	0.0002	T
286	OB8	OB36	2	0.0002	T
285	OB5	OB38	2	0.0002	T
284	OB58	OB84	2	0.0002	T
283	OB7	OB135	2	0.0002	T
282	OB85	OB136	2	0.0002	T
281	OB68	OB179	2	0.0002	T
280	OB20	OB184	2	0.0002	T
279	OB53	OB211	2	0.0002	T
278	OB193	OB250	2	0.0002	T
277	OB111	OB261	2	0.0002	T
276	OB249	OB273	2	0.0002	T
275	CL380	OB288	3	0.0002	T
274	CL369	OB294	6	0.0002	T
273	OB57	OB297	2	0.0002	T
272	OB247	OB327	2	0.0002	T
271	OB200	OB348	2	0.0002	T
270	OB181	OB394	2	0.0002	T
269	OB189	OB397	2	0.0002	T
268	OB139	CL371	3	0.0002	T
267	OB214	OB256	2	0.0002	T
266	CL331	CL335	4	0.0002	T
265	CL304	OB248	3	0.0002	T
264	CL307	OB338	3	0.0002	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
263	CL297	OB388	3	0.0002	T
262	CL357	CL373	4	0.0002	T
261	CL337	OB232	3	0.0002	T
260	OB22	CL332	3	0.0002	T
259	CL356	CL309	4	0.0002	T
258	CL315	OB315	5	0.0002	T
257	CL338	CL295	5	0.0002	T
256	OB21	OB39	2	0.0002	T
255	OB26	OB119	2	0.0002	T
254	CL388	CL376	4	0.0002	T
253	OB44	OB190	2	0.0002	T
252	OB63	OB208	2	0.0002	T
251	OB174	OB224	2	0.0002	T
250	OB243	OB279	2	0.0002	T
249	OB263	OB337	2	0.0002	T
248	OB212	OB344	2	0.0002	T
247	OB115	OB125	2	0.0002	T
246	CL298	OB164	3	0.0003	T
245	OB75	CL300	3	0.0003	T
244	CL291	OB347	3	0.0003	T
243	CL289	OB227	4	0.0003	T
242	OB37	CL349	3	0.0003	T
241	CL381	CL334	5	0.0003	T
240	CL345	OB296	3	0.0003	T
239	CL360	OB330	3	0.0003	T
238	CL343	OB233	3	0.0003	T
237	CL320	CL355	5	0.0003	T
236	CL358	CL319	5	0.0003	T
235	CL279	OB150	3	0.0003	T
234	CL276	OB293	3	0.0003	T
233	CL277	OB363	3	0.0003	T
232	OB51	OB260	2	0.0003	T
231	CL379	OB272	3	0.0003	T
230	OB169	OB343	2	0.0003	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
229	OB219	OB367	2	0.0003	T
228	OB64	OB326	2	0.0003	T
227	OB122	OB385	2	0.0003	T
226	CL361	CL344	6	0.0003	T
225	CL280	CL326	5	0.0003	T
224	OB45	CL314	3	0.0003	
223	CL287	OB100	4	0.0003	T
222	CL367	CL339	4	0.0003	T
221	CL325	OB334	3	0.0003	T
220	CL282	OB175	3	0.0003	T
219	OB54	CL272	3	0.0003	T
218	CL323	CL266	6	0.0004	
217	OB117	OB285	2	0.0004	T
216	OB148	OB342	2	0.0004	T
215	OB76	OB360	2	0.0004	T
214	OB333	OB386	2	0.0004	T
213	CL377	OB322	3	0.0004	T
212	OB71	CL318	4	0.0004	T
211	CL302	OB239	3	0.0004	T
210	OB134	CL294	3	0.0004	T
209	OB94	CL290	3	0.0004	T
208	CL292	OB379	3	0.0004	T
207	CL263	CL390	6	0.0004	T
206	OB254	CL258	6	0.0004	T
205	CL268	CL293	5	0.0004	T
204	CL322	CL255	5	0.0004	T
203	CL249	CL301	4	0.0004	T
202	OB186	CL348	3	0.0004	T
201	CL259	CL316	7	0.0004	T
200	CL285	OB86	3	0.0004	T
199	CL273	OB267	3	0.0004	T
198	CL267	OB301	3	0.0004	T
197	CL296	CL270	4	0.0004	
196	OB17	OB206	2	0.0004	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
195	CL393	OB242	3	0.0004	T
194	OB287	OB289	2	0.0004	T
193	OB118	CL365	3	0.0004	T
192	OB197	OB280	2	0.0004	
191	CL240	OB345	4	0.0004	
190	CL333	OB298	3	0.0005	T
189	CL275	CL260	6	0.0005	T
188	CL244	CL261	6	0.0005	T
187	CL245	OB226	4	0.0005	T
186	OB10	CL385	6	0.0005	T
185	OB198	OB303	2	0.0005	T
184	OB72	OB316	2	0.0005	T
183	OB202	OB353	2	0.0005	T
182	CL313	OB114	3	0.0005	T
181	CL312	CL265	5	0.0005	T
180	CL256	OB341	3	0.0005	T
179	CL238	OB146	4	0.0005	T
178	OB24	CL233	4	0.0005	
177	CL246	OB177	4	0.0005	
176	CL239	CL210	6	0.0005	T
175	OB213	CL229	3	0.0005	T
174	OB359	OB375	2	0.0006	T
173	OB67	CL305	3	0.0006	T
172	CL308	OB317	3	0.0006	T
171	CL359	CL231	5	0.0006	T
170	CL254	OB240	5	0.0006	T
169	CL247	OB168	3	0.0006	T
168	CL283	CL269	4	0.0006	T
167	CL200	OB123	4	0.0006	T
166	CL234	OB372	4	0.0006	T
165	CL232	CL278	4	0.0006	T
164	CL281	CL205	7	0.0006	T
163	CL274	CL317	9	0.0006	T
162	OB69	CL271	3	0.0006	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
161	CL222	OB392	5	0.0006	T
160	CL242	CL207	9	0.0006	T
159	CL230	OB182	3	0.0006	T
158	CL227	OB295	3	0.0006	T
157	CL241	CL340	7	0.0006	T
156	OB41	OB157	2	0.0006	T
155	CL374	OB265	3	0.0006	
154	OB149	OB223	2	0.0007	T
153	OB172	OB380	2	0.0007	
152	CL251	CL202	5	0.0007	T
151	CL228	CL336	4	0.0007	T
150	OB83	CL211	4	0.0007	
149	CL195	OB314	4	0.0007	
148	OB128	OB387	2	0.0007	T
147	OB225	OB292	2	0.0007	
146	CL201	CL350	9	0.0008	
145	CL243	CL197	8	0.0008	
144	CL183	CL248	4	0.0008	T
143	CL262	CL221	7	0.0008	
142	OB201	CL194	3	0.0008	T
141	OB35	OB282	2	0.0008	
140	CL286	CL185	4	0.0008	T
139	CL189	OB313	7	0.0008	
138	CL236	CL264	8	0.0008	T
137	CL352	OB319	3	0.0008	T
136	CL218	CL306	8	0.0008	T
135	CL184	OB180	3	0.0008	
134	CL187	OB358	5	0.0008	
133	OB59	OB171	2	0.0009	
132	CL252	CL321	5	0.0009	
131	CL288	CL257	9	0.0009	T
130	CL310	CL174	5	0.0009	T
129	CL225	OB104	6	0.0009	
128	OB132	OB191	2	0.0009	T

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
127	CL215	CL169	5	0.0009	
126	CL213	OB277	4	0.0009	
125	CL351	CL193	5	0.001	
124	CL178	CL250	6	0.001	
123	CL180	CL253	5	0.001	T
122	CL396	OB276	3	0.001	T
121	CL191	CL203	8	0.001	
120	CL219	CL303	5	0.001	
119	CL196	OB351	3	0.001	
118	CL158	OB366	4	0.0011	T
117	OB108	CL154	3	0.0011	T
116	CL165	CL212	8	0.0011	T
115	OB14	CL224	4	0.0011	
114	CL171	CL206	11	0.0011	
113	CL160	CL157	16	0.0011	
112	CL188	CL182	9	0.0011	
111	CL142	OB391	4	0.0012	T
110	CL208	CL198	6	0.0012	
109	OB6	OB356	2	0.0012	
108	CL168	CL199	7	0.0012	
107	CL192	OB216	3	0.0012	
106	CL190	CL175	6	0.0012	
105	CL181	OB310	6	0.0013	
104	CL378	CL148	4	0.0013	T
103	CL237	CL137	8	0.0013	T
102	CL140	OB109	5	0.0013	
101	CL204	CL152	10	0.0013	
100	OB101	CL172	4	0.0013	
99	CL141	OB113	3	0.0013	
98	CL156	CL216	4	0.0013	
97	CL176	CL150	10	0.0013	
96	CL209	CL144	7	0.0014	
95	CL327	CL126	6	0.0014	
94	CL235	CL173	6	0.0014	

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
93	CL125	CL170	10	0.0014	
92	CL149	OB259	5	0.0014	T
91	CL134	OB92	6	0.0014	
90	CL311	CL179	6	0.0014	
89	CL167	CL177	8	0.0015	T
88	CL138	CL164	15	0.0015	
87	CL223	CL133	6	0.0015	
86	CL151	CL166	8	0.0015	
85	CL372	CL162	6	0.0015	
84	CL119	OB318	4	0.0017	T
83	CL139	CL131	16	0.0017	
82	CL143	CL130	12	0.0017	
81	OB49	OB241	2	0.0017	
80	CL105	CL217	8	0.0018	
79	CL92	CL155	8	0.0018	
78	CL112	CL146	18	0.0019	
77	CL145	CL226	14	0.0019	
76	CL299	CL214	4	0.0019	
75	CL124	CL120	11	0.0019	
74	CL114	CL136	19	0.0019	
73	CL116	CL132	13	0.002	
72	CL115	CL329	6	0.002	
71	CL123	CL220	8	0.0021	
70	CL111	CL147	6	0.0022	
69	CL163	CL101	19	0.0023	
68	CL102	CL87	11	0.0023	
67	CL186	CL93	16	0.0023	
66	CL117	CL118	7	0.0024	
65	CL110	CL128	8	0.0025	
64	CL106	OB398	7	0.0025	
63	CL95	OB395	7	0.0026	
62	CL88	OB350	16	0.0026	
61	CL113	CL96	23	0.0026	
60	CL89	CL121	16	0.0027	

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
59	CL108	CL82	19	0.0027	
58	CL91	CL127	11	0.0028	
57	CL109	CL398	4	0.0028	
56	CL83	CL161	21	0.0028	
55	CL94	CL104	10	0.0029	
54	CL71	CL97	18	0.003	
53	CL78	CL364	20	0.003	
52	OB112	OB204	2	0.0031	
51	CL103	OB238	9	0.0031	
50	CL90	CL284	8	0.0033	
49	CL74	CL129	25	0.0034	
48	OB18	CL99	4	0.0036	
47	CL76	OB290	5	0.0036	
46	CL77	CL62	30	0.0037	
45	CL84	OB29	5	0.0038	
44	CL80	CL81	10	0.0038	
43	CL56	CL107	24	0.0039	
42	CL75	CL86	19	0.0039	
41	CL61	CL85	29	0.0039	
40	CL122	CL53	23	0.0039	
39	CL65	CL73	21	0.004	
38	CL59	OB311	20	0.0042	
37	CL55	OB106	11	0.0043	
36	CL63	CL64	14	0.0044	
35	CL49	CL153	27	0.0044	
34	CL67	CL72	22	0.0046	
33	CL69	CL70	25	0.0047	
32	CL51	CL66	16	0.0048	
31	CL60	CL79	24	0.0051	
30	CL38	CL98	24	0.0053	
29	CL54	CL159	21	0.0053	
28	CL57	OB13	5	0.0055	
27	CL52	CL47	7	0.0062	
26	CL42	OB373	20	0.0067	

The CLUSTER Procedure
Average Linkage Cluster Analysis

Cluster History					
Number of Clusters	Clusters Joined		Freq	Norm RMS Distance	Tie
25	CL48	CL100	8	0.1224	
24	CL50	CL68	19	0.1224	
23	CL37	CL58	22	0.1224	
22	CL40	CL41	52	0.1225	
21	CL43	CL39	45	0.1225	
20	CL33	CL45	30	0.1225	
19	CL44	CL36	24	0.1225	
18	CL30	CL35	51	0.1225	
17	CL32	CL29	37	0.1225	
16	CL34	CL26	42	0.1225	
15	CL24	CL27	26	0.1842	
14	CL31	CL17	61	0.1856	
13	CL28	CL23	27	0.1936	
12	CL21	CL46	75	0.1974	
11	CL18	CL22	103	0.2563	
10	CL13	CL16	69	0.2967	
9	CL25	CL135	11	0.3121	
8	CL14	CL19	85	0.3324	
7	CL15	CL9	37	0.4219	
6	CL12	CL11	178	0.4558	
5	CL20	CL10	99	0.5652	
4	CL7	CL8	122	0.711	
3	CL6	CL5	277	0.9144	
2	CL4	CL3	399	1.3141	
1	CL2	OB305	400	2.3619	

The FASTCLUS Procedure
Replace=FULL Radius=0 Maxclusters=2 Maxiter=1

Initial Seeds		
Cluster	GRE	GPA
1	220.0000000	2.8299999
2	800.0000000	4.0000000

Criterion Based on Final Seeds =	52.3615

Cluster Summary						
Cluster	Frequency	RMS Std Deviation	Maximum Distance from Seed to Observation	Radius Exceeded	Nearest Cluster	Distance Between Cluster Centroids
1	123	43.3945	217.6		2	193.6
2	277	55.0624	162.9		1	193.6

Statistics for Variables				
Variable	Total STD	Within STD	R-Square	RSQ/(1-RSQ)
GRE	115.51654	73.20744	0.599380	1.496133
GPA	0.38057	0.36059	0.104481	0.116671
OVER-ALL	81.68297	51.76611	0.599375	1.496099

Pseudo F Statistic =	595.45

Approximate Expected Over-All R-Squared =	0.75125

Cubic Clustering Criterion =	-9.485

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

Cluster Means		
Cluster	GRE	GPA
1	453.6585366	3.2055285
2	647.2202166	3.4717690

Cluster Standard Deviations		
Cluster	GRE	GPA
1	61.36785473	0.37956663
2	77.86925978	0.35187507