

The UNIVARIATE Procedure
Variable: Math

Moments			
N	40	Sum Weights	40
Mean	79.5	Sum Observations	3180
Std Deviation	9.41902058	Variance	88.7179487
Skewness	0.15416507	Kurtosis	-0.4980133
Uncorrected SS	256270	Corrected SS	3460
Coeff Variation	11.8478246	Std Error Mean	1.48927792

Basic Statistical Measures			
Location		Variability	
Mean	79.50000	Std Deviation	9.41902
Median	79.00000	Variance	88.71795
Mode	82.00000	Range	38.00000
		Interquartile Range	13.50000

Note: The mode displayed is the smallest of 2 modes with a count of 3.

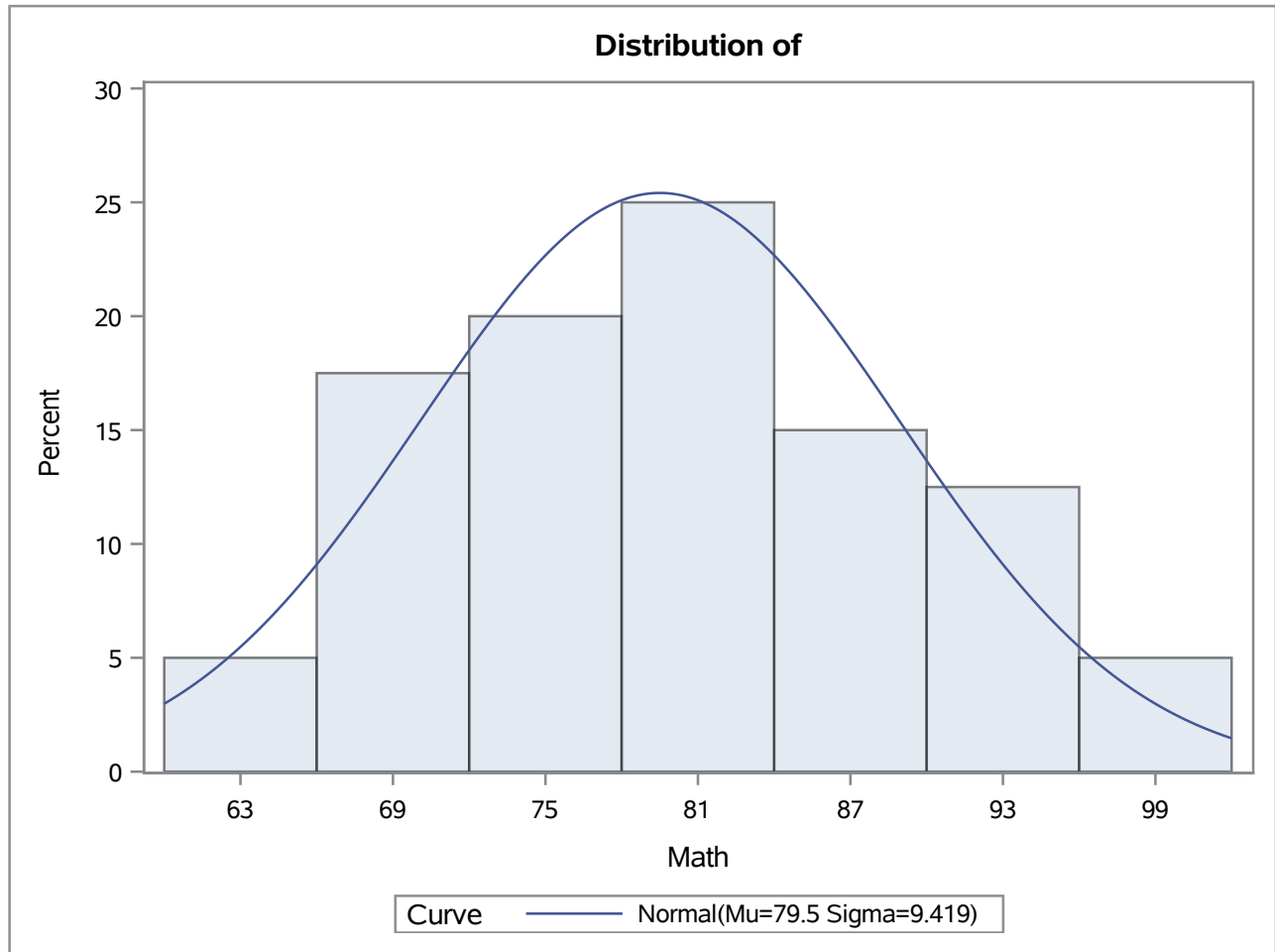
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	53.38157	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	99.0
99%	99.0
95%	96.5
90%	92.0
75% Q3	86.0
50% Median	79.0
25% Q1	72.5
10%	67.0
5%	64.5
1%	61.0
0% Min	61.0

The UNIVARIATE Procedure
Variable: Math

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
61	37	91	12
63	25	93	1
66	38	95	6
66	31	98	3
68	22	99	4

The UNIVARIATE Procedure



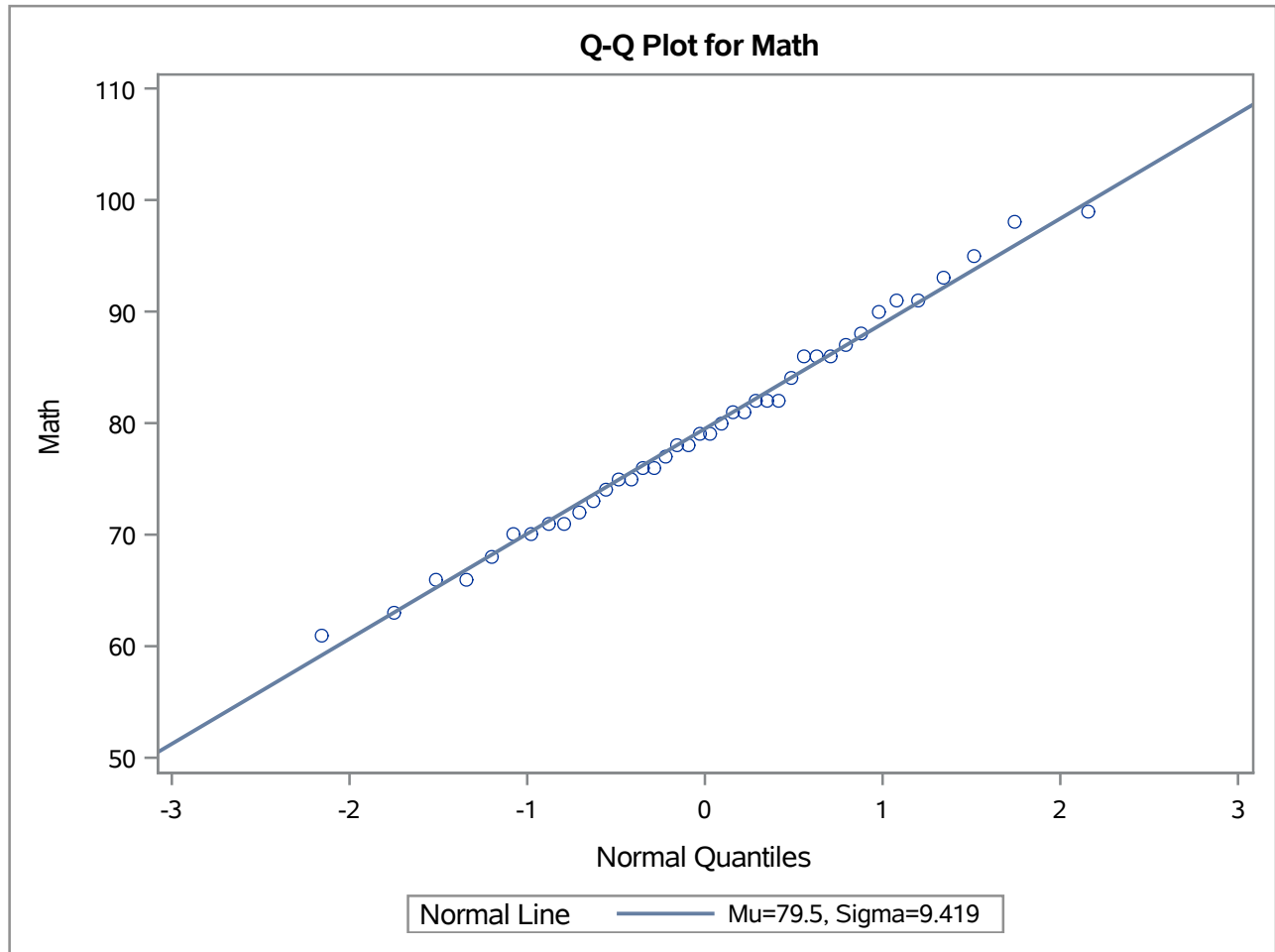
**The UNIVARIATE Procedure
Fitted Normal Distribution for Math**

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	79.5
Std Dev	Sigma	9.419021

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.07034282	Pr > D	>0.150
Cramer-von Mises	W-Sq	0.01815604	Pr > W-Sq	>0.250
Anderson-Darling	A-Sq	0.12854253	Pr > A-Sq	>0.250

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	61.0000	57.5881
5.0	64.5000	64.0071
10.0	67.0000	67.4290
25.0	72.5000	73.1470
50.0	79.0000	79.5000
75.0	86.0000	85.8530
90.0	92.0000	91.5710
95.0	96.5000	94.9929
99.0	99.0000	101.4119

The UNIVARIATE Procedure



The UNIVARIATE Procedure
Variable: Physics

Moments			
N	40	Sum Weights	40
Mean	77.55	Sum Observations	3102
Std Deviation	9.90195526	Variance	98.0487179
Skewness	-0.6049918	Kurtosis	-0.0057536
Uncorrected SS	244384	Corrected SS	3823.9
Coeff Variation	12.7684787	Std Error Mean	1.5656366

Basic Statistical Measures			
Location		Variability	
Mean	77.55000	Std Deviation	9.90196
Median	79.50000	Variance	98.04872
Mode	81.00000	Range	42.00000
		Interquartile Range	14.00000

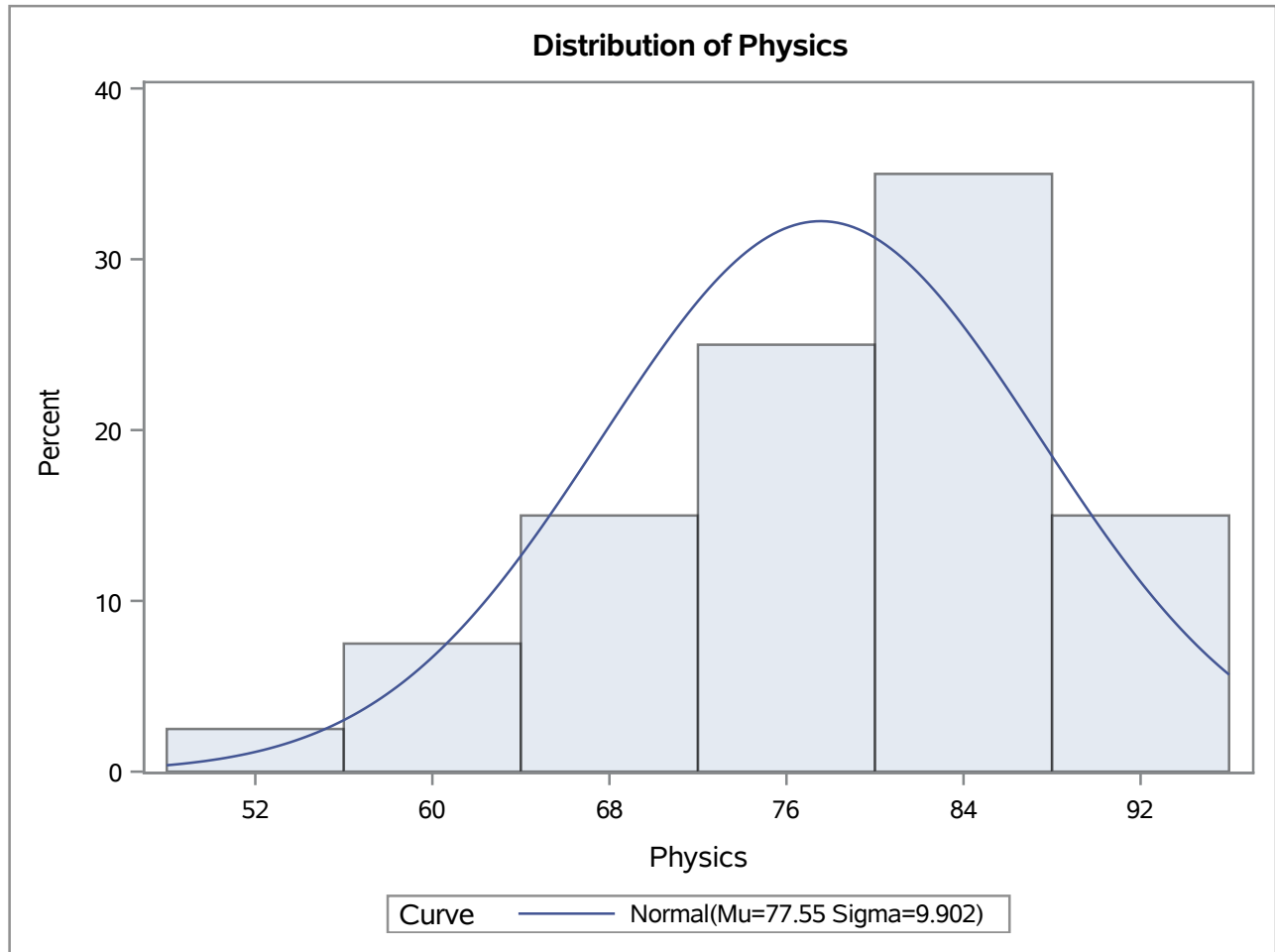
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	49.53257	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	93.0
99%	93.0
95%	91.0
90%	90.5
75% Q3	85.0
50% Median	79.5
25% Q1	71.0
10%	63.0
5%	60.0
1%	51.0
0% Min	51.0

The UNIVARIATE Procedure
Variable: Physics

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
51	25	90	1
60	37	91	4
60	22	91	5
62	31	91	20
64	14	93	3

The UNIVARIATE Procedure



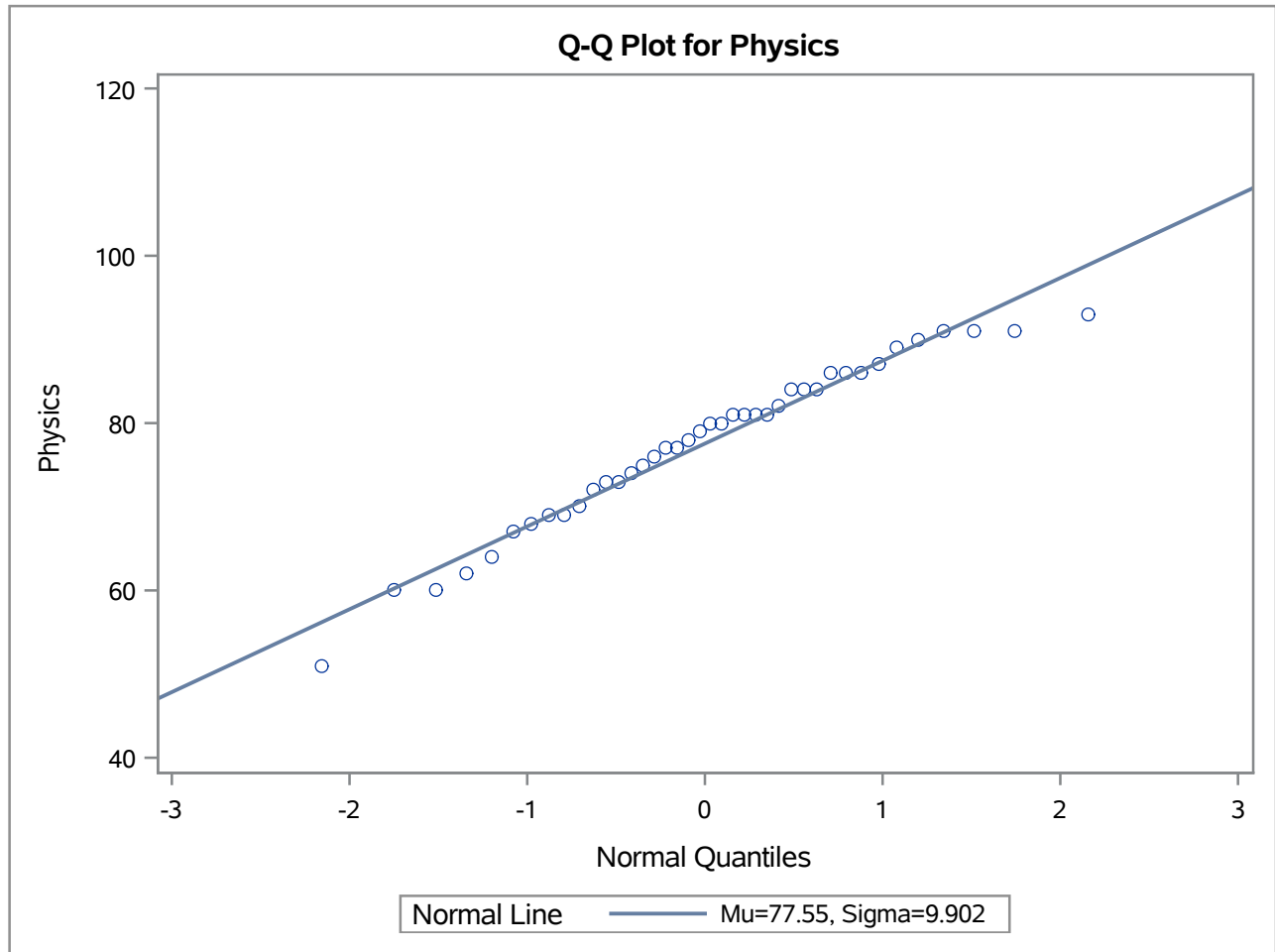
**The UNIVARIATE Procedure
Fitted Normal Distribution for Physics**

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	77.55
Std Dev	Sigma	9.901955

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.09771068	Pr > D	>0.150
Cramer-von Mises	W-Sq	0.05623708	Pr > W-Sq	>0.250
Anderson-Darling	A-Sq	0.38133060	Pr > A-Sq	>0.250

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	51.0000	54.5146
5.0	60.0000	61.2627
10.0	63.0000	64.8601
25.0	71.0000	70.8712
50.0	79.5000	77.5500
75.0	85.0000	84.2288
90.0	90.5000	90.2399
95.0	91.0000	93.8373
99.0	93.0000	100.5854

The UNIVARIATE Procedure



The UNIVARIATE Procedure
Variable: English

Moments			
N	40	Sum Weights	40
Mean	86.575	Sum Observations	3463
Std Deviation	6.45253876	Variance	41.6352564
Skewness	-0.3600323	Kurtosis	-0.4935186
Uncorrected SS	301433	Corrected SS	1623.775
Coeff Variation	7.45312014	Std Error Mean	1.02023596

Basic Statistical Measures			
Location		Variability	
Mean	86.57500	Std Deviation	6.45254
Median	87.00000	Variance	41.63526
Mode	85.00000	Range	25.00000
		Interquartile Range	8.50000

Note: The mode displayed is the smallest of 6 modes with a count of 3.

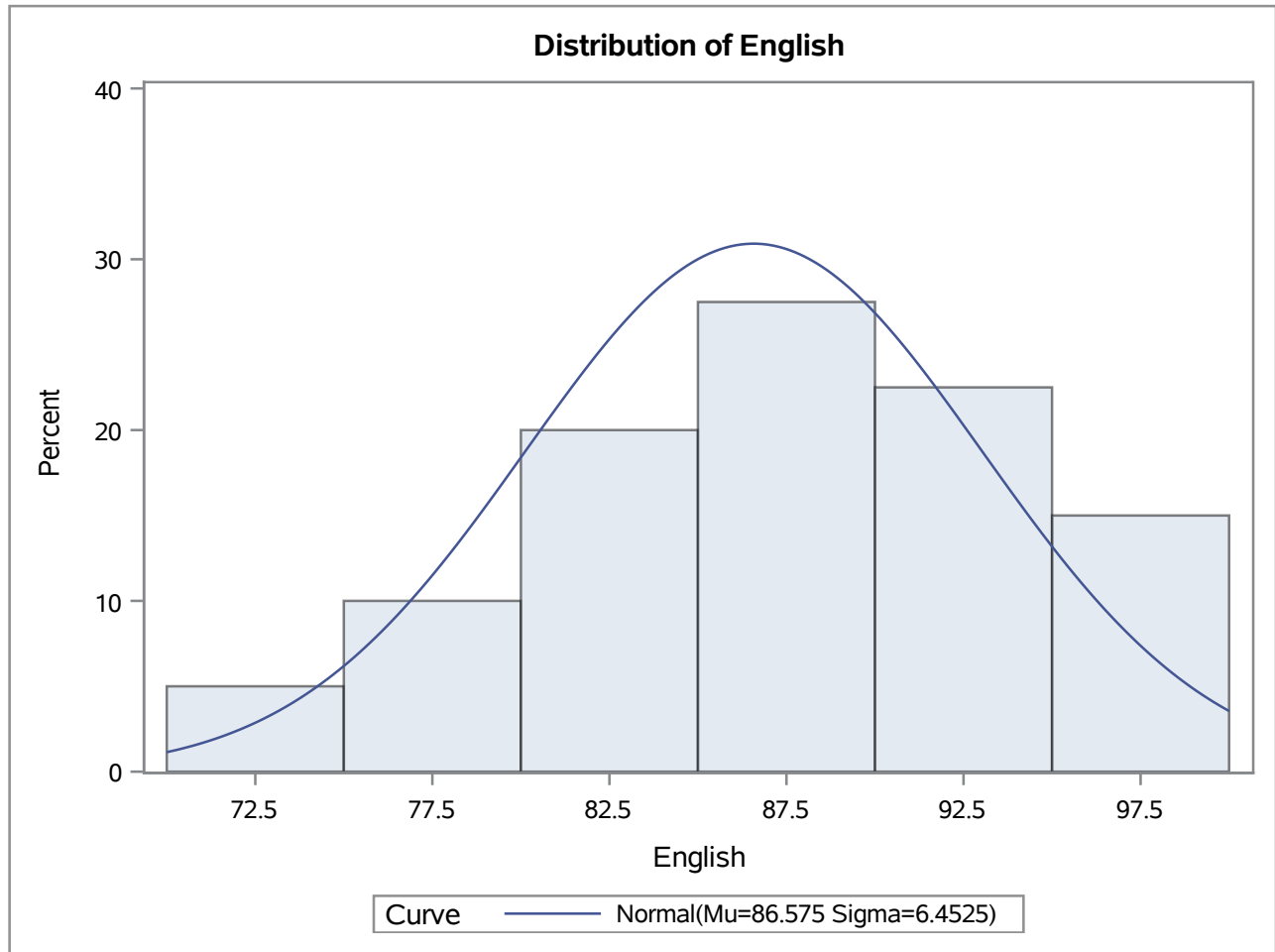
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	84.85782	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	97.0
99%	97.0
95%	96.0
90%	95.5
75% Q3	91.0
50% Median	87.0
25% Q1	82.5
10%	77.0
5%	75.0
1%	72.0
0% Min	72.0

The UNIVARIATE Procedure
Variable: English

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
72	38	95	13
74	39	96	6
76	31	96	20
76	7	96	30
78	25	97	37

The UNIVARIATE Procedure



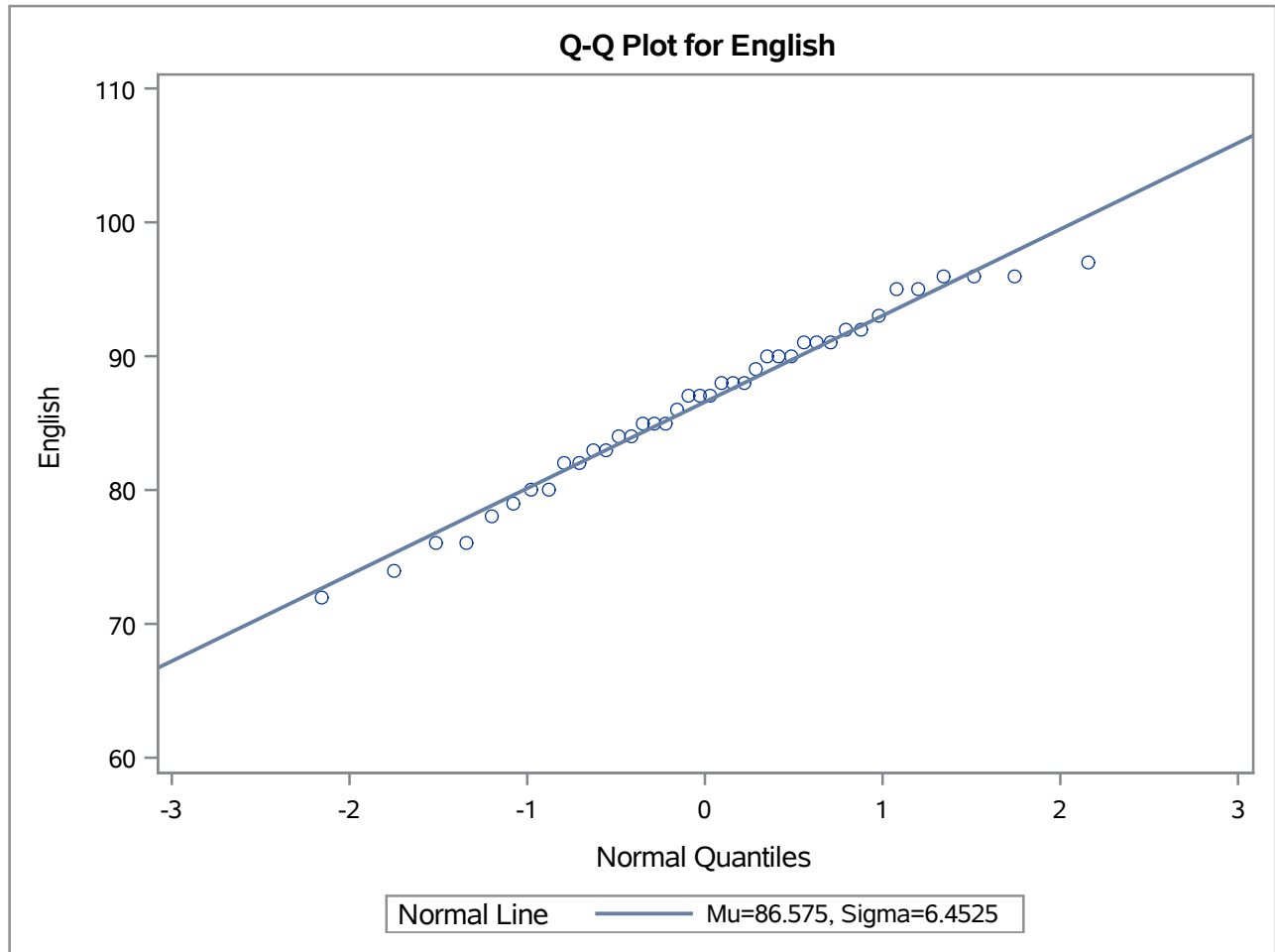
**The UNIVARIATE Procedure
Fitted Normal Distribution for English**

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	86.575
Std Dev	Sigma	6.452539

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.07722090	Pr > D	>0.150
Cramer-von Mises	W-Sq	0.03448985	Pr > W-Sq	>0.250
Anderson-Darling	A-Sq	0.27124408	Pr > A-Sq	>0.250

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	72.0000	71.5642
5.0	75.0000	75.9615
10.0	77.0000	78.3057
25.0	82.5000	82.2228
50.0	87.0000	86.5750
75.0	91.0000	90.9272
90.0	95.5000	94.8443
95.0	96.0000	97.1885
99.0	97.0000	101.5858

The UNIVARIATE Procedure



The UNIVARIATE Procedure
Variable: History

Moments			
N	40	Sum Weights	40
Mean	85.35	Sum Observations	3414
Std Deviation	7.97287067	Variance	63.5666667
Skewness	-0.6613726	Kurtosis	0.48581763
Uncorrected SS	293864	Corrected SS	2479.1
Coeff Variation	9.34138332	Std Error Mean	1.26062154

Basic Statistical Measures			
Location		Variability	
Mean	85.35000	Std Deviation	7.97287
Median	86.50000	Variance	63.56667
Mode	82.00000	Range	34.00000
		Interquartile Range	8.00000

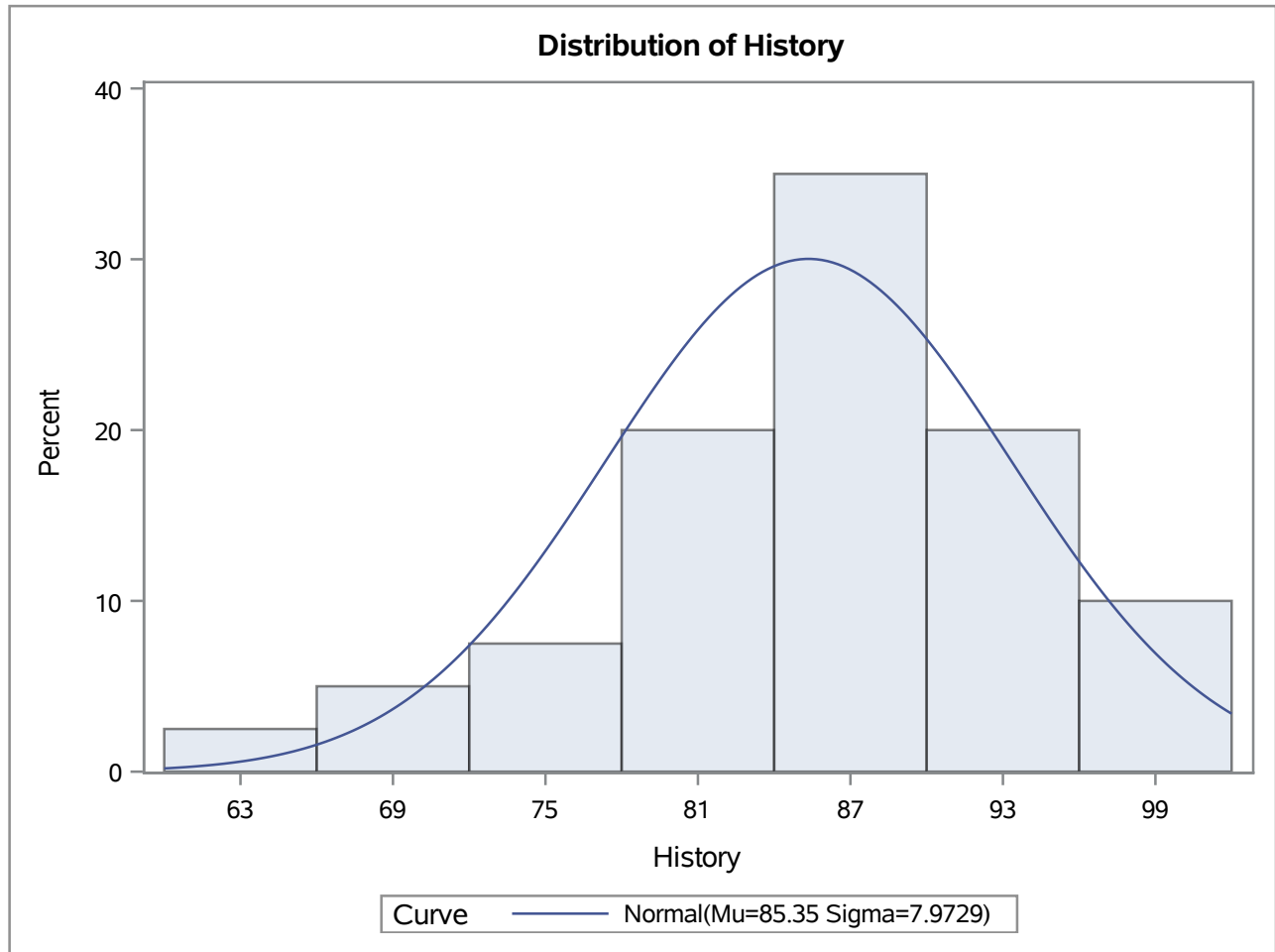
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	67.7047	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	99.0
99%	99.0
95%	98.0
90%	95.5
75% Q3	90.0
50% Median	86.5
25% Q1	82.0
10%	74.0
5%	68.5
1%	65.0
0% Min	65.0

The UNIVARIATE Procedure
Variable: History

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
65	28	95	5
67	31	96	37
70	38	97	11
73	25	99	6
75	39	99	30

The UNIVARIATE Procedure



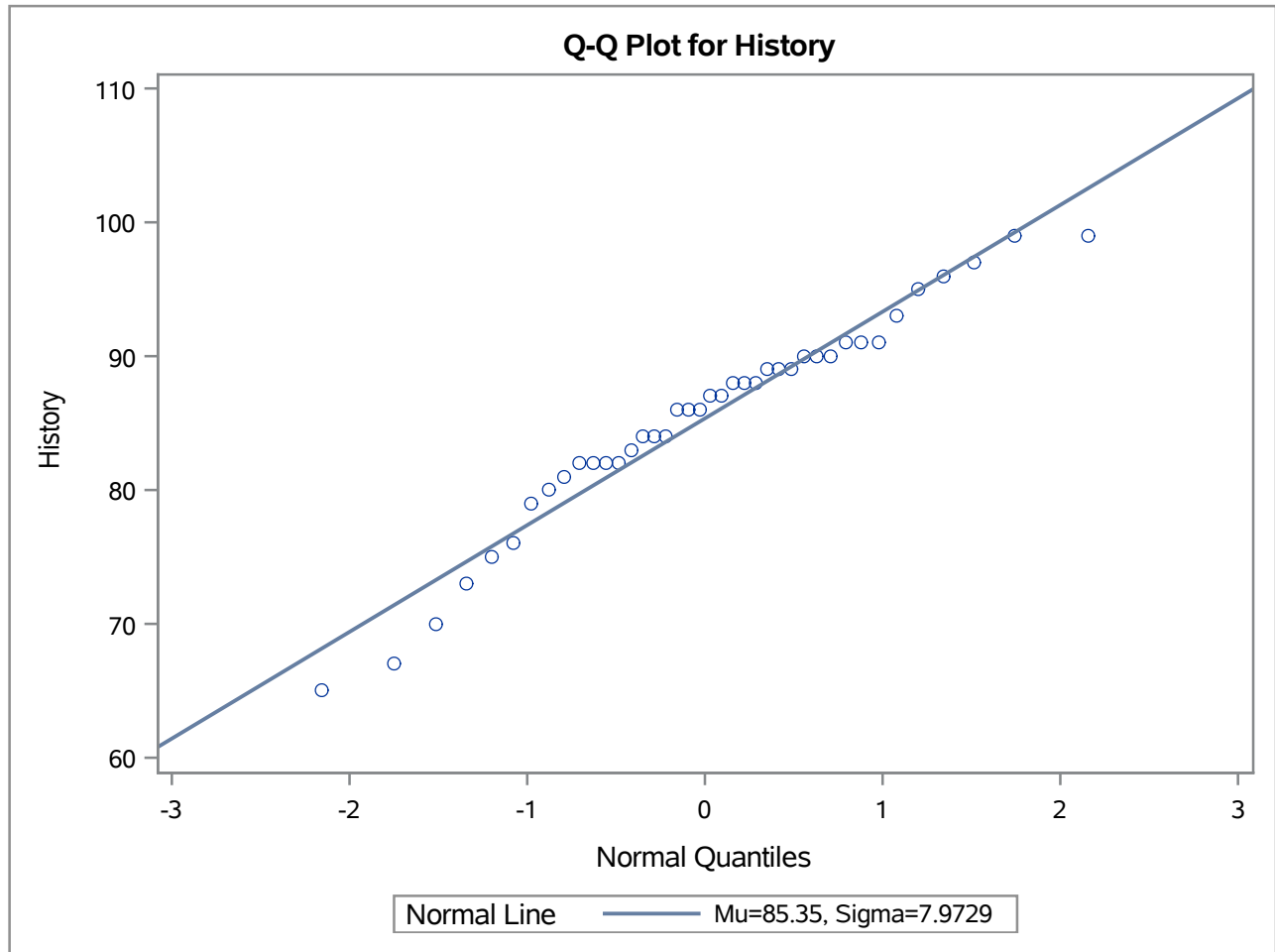
The UNIVARIATE Procedure
Fitted Normal Distribution for History

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	85.35
Std Dev	Sigma	7.972871

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.11217885	Pr > D	>0.150
Cramer-von Mises	W-Sq	0.09133680	Pr > W-Sq	0.144
Anderson-Darling	A-Sq	0.55936397	Pr > A-Sq	0.143

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	65.0000	66.8023
5.0	68.5000	72.2358
10.0	74.0000	75.1324
25.0	82.0000	79.9724
50.0	86.5000	85.3500
75.0	90.0000	90.7276
90.0	95.5000	95.5676
95.0	98.0000	98.4642
99.0	99.0000	103.8977

The UNIVARIATE Procedure



The UNIVARIATE Procedure
Variable: GPA

Moments			
N	40	Sum Weights	40
Mean	3.7115	Sum Observations	148.46
Std Deviation	0.09037103	Variance	0.00816692
Skewness	-0.0824809	Kurtosis	1.40474824
Uncorrected SS	551.3278	Corrected SS	0.31851
Coeff Variation	2.43489236	Std Error Mean	0.01428891

Basic Statistical Measures			
Location		Variability	
Mean	3.711500	Std Deviation	0.09037
Median	3.705000	Variance	0.00817
Mode	3.750000	Range	0.47000
		Interquartile Range	0.08500

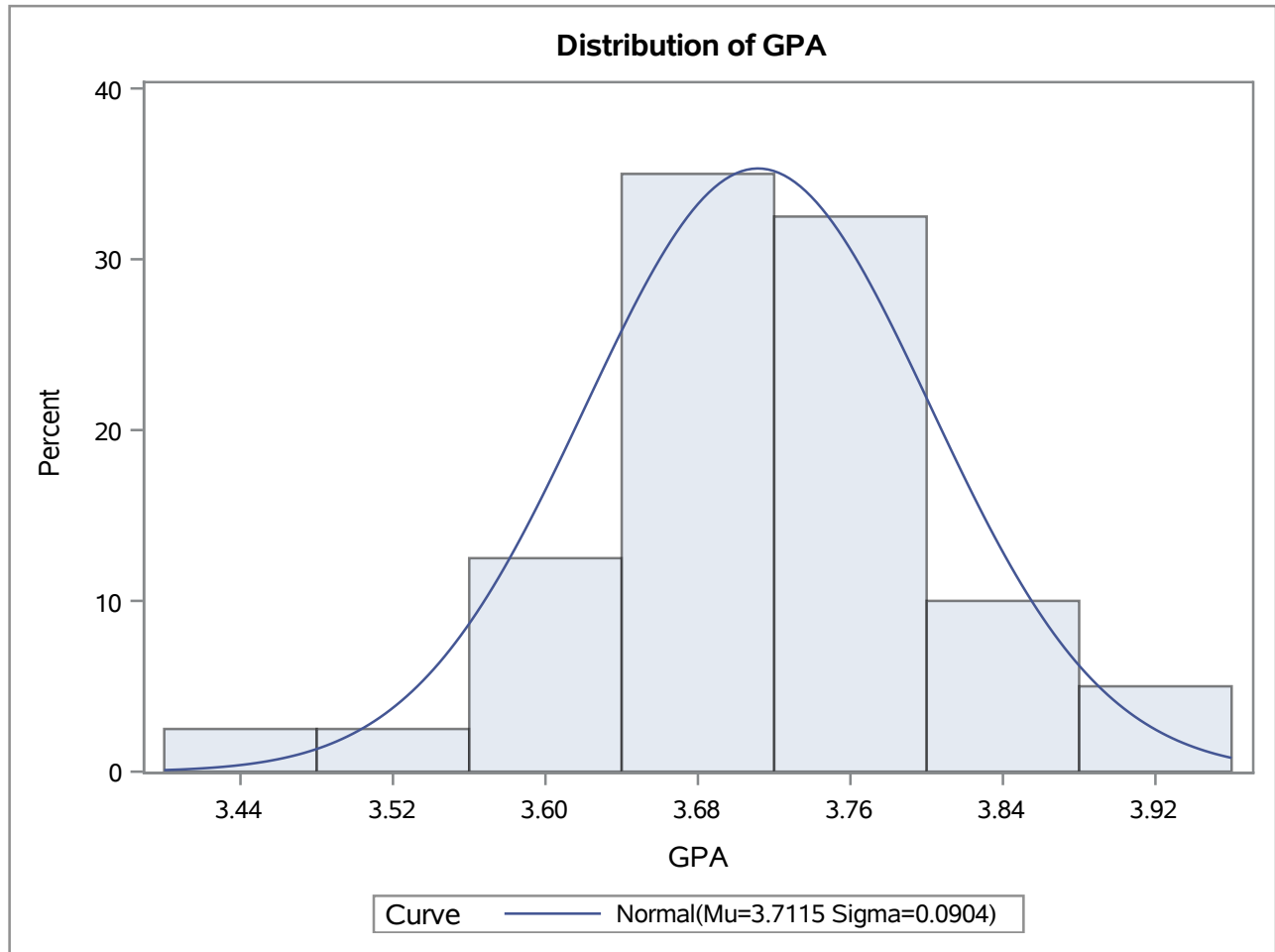
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	259.7468	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	3.930
99%	3.930
95%	3.885
90%	3.805
75% Q3	3.750
50% Median	3.705
25% Q1	3.665
10%	3.620
5%	3.565
1%	3.460
0% Min	3.460

The UNIVARIATE Procedure
Variable: GPA

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
3.46	25	3.80	20
3.52	31	3.81	30
3.61	14	3.86	1
3.62	17	3.91	3
3.62	16	3.93	6

The UNIVARIATE Procedure



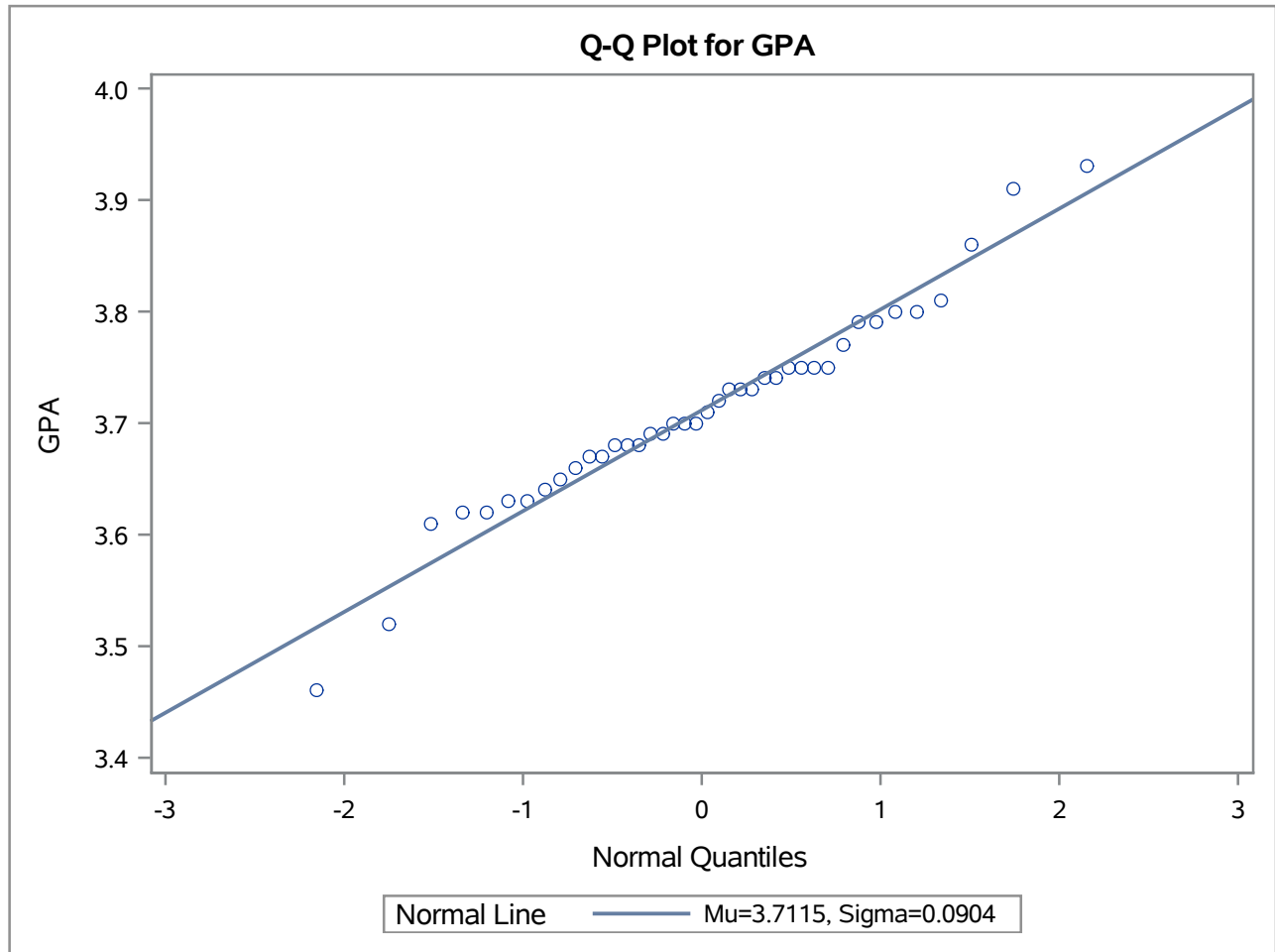
**The UNIVARIATE Procedure
Fitted Normal Distribution for GPA**

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	3.7115
Std Dev	Sigma	0.090371

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.11004610	Pr > D	>0.150
Cramer-von Mises	W-Sq	0.06150884	Pr > W-Sq	>0.250
Anderson-Darling	A-Sq	0.45370026	Pr > A-Sq	>0.250

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.46000	3.50127
5.0	3.56500	3.56285
10.0	3.62000	3.59568
25.0	3.66500	3.65055
50.0	3.70500	3.71150
75.0	3.75000	3.77245
90.0	3.80500	3.82732
95.0	3.88500	3.86015
99.0	3.93000	3.92173

The UNIVARIATE Procedure



The UNIVARIATE Procedure
Variable: NSECH

Moments			
N	40	Sum Weights	40
Mean	8.375	Sum Observations	335
Std Deviation	3.34884213	Variance	11.2147436
Skewness	0.47923867	Kurtosis	-0.2783451
Uncorrected SS	3243	Corrected SS	437.375
Coeff Variation	39.9861746	Std Error Mean	0.52949843

Basic Statistical Measures			
Location		Variability	
Mean	8.375000	Std Deviation	3.34884
Median	8.000000	Variance	11.21474
Mode	8.000000	Range	13.00000
		Interquartile Range	4.50000

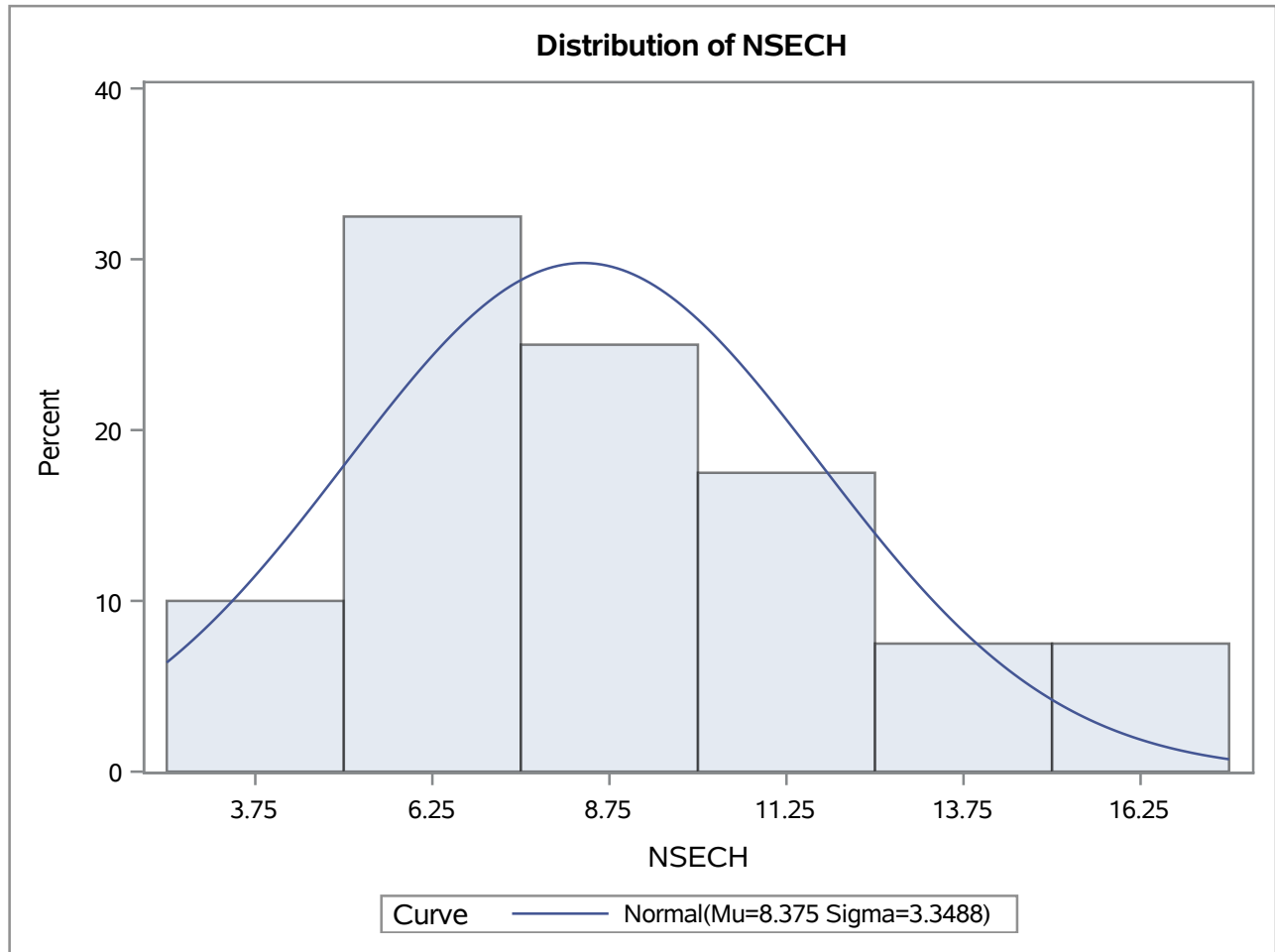
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	15.81686	Pr > t 	<.0001
Sign	M	20	Pr >= M 	<.0001
Signed Rank	S	410	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	16.0
99%	16.0
95%	15.0
90%	13.0
75% Q3	10.5
50% Median	8.0
25% Q1	6.0
10%	4.5
5%	3.0
1%	3.0
0% Min	3.0

The UNIVARIATE Procedure
Variable: NSECH

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
3	40	13	9
3	25	13	19
3	14	15	3
4	29	15	20
5	34	16	8

The UNIVARIATE Procedure



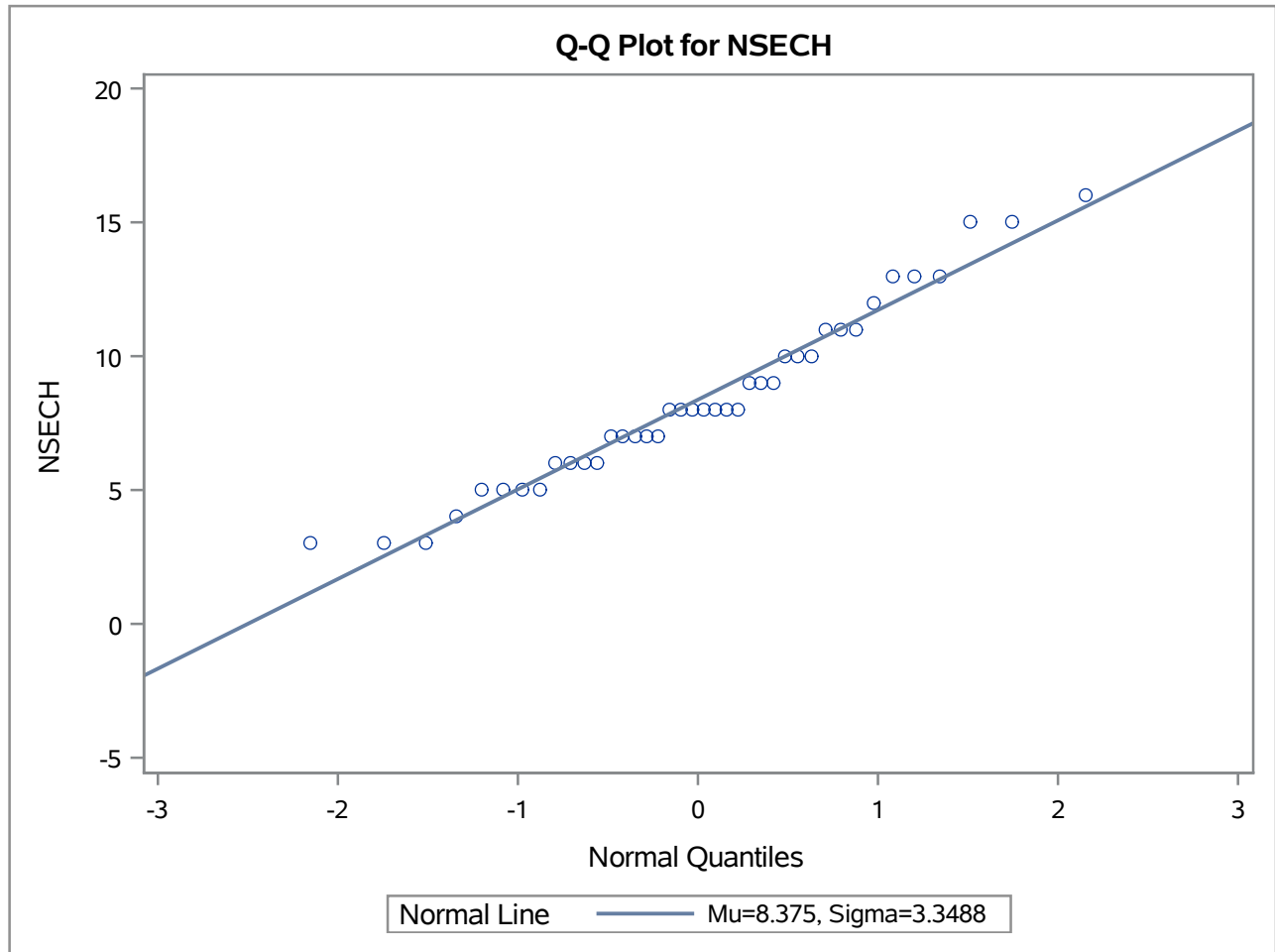
The UNIVARIATE Procedure
Fitted Normal Distribution for NSECH

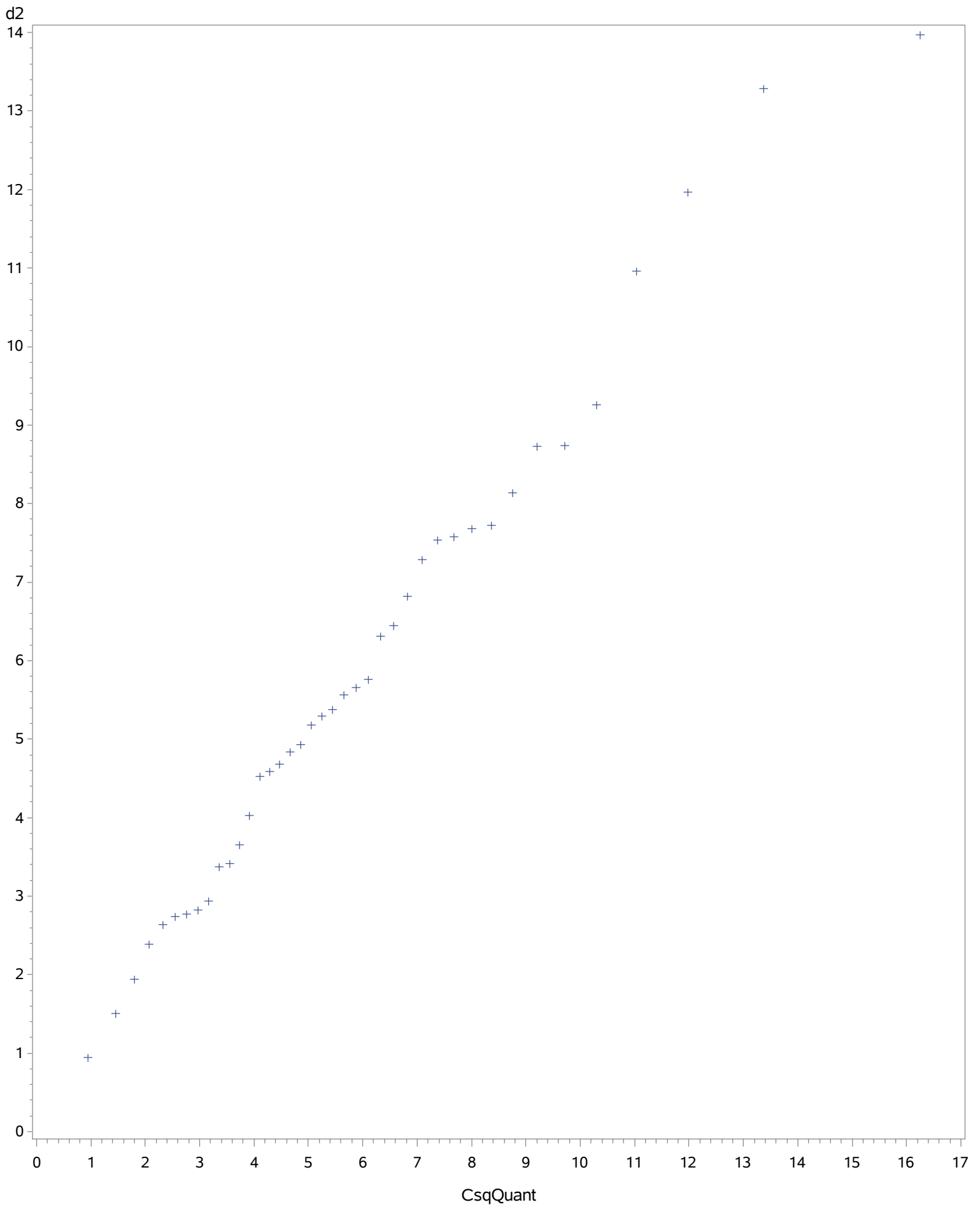
Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	8.375
Std Dev	Sigma	3.348842

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.14457997	Pr > D	0.034
Cramer-von Mises	W-Sq	0.08399038	Pr > W-Sq	0.185
Anderson-Darling	A-Sq	0.50346808	Pr > A-Sq	0.202

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	0.58443
5.0	3.00000	2.86664
10.0	4.50000	4.08329
25.0	6.00000	6.11624
50.0	8.00000	8.37500
75.0	10.50000	10.63376
90.0	13.00000	12.66671
95.0	15.00000	13.88336
99.0	16.00000	16.16557

The UNIVARIATE Procedure





The CORR Procedure

6 Variables:	Math	Physics	English	History	GPA	NSECH
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Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	40	79.50000	9.41902	3180	61.00000	99.00000
Physics	40	77.55000	9.90196	3102	51.00000	93.00000
English	40	86.57500	6.45254	3463	72.00000	97.00000
History	40	85.35000	7.97287	3414	65.00000	99.00000
GPA	40	3.71150	0.09037	148.46000	3.46000	3.93000
NSECH	40	8.37500	3.34884	335.00000	3.00000	16.00000

Pearson Correlation Coefficients, N = 40						
	Math	Physics	English	History	GPA	NSECH
Math	1.00000	0.86463	0.13733	0.23798	0.69735	0.57187
Physics	0.86463	1.00000	0.28547	0.25798	0.76383	0.56351
English	0.13733	0.28547	1.00000	0.78697	0.53362	0.30303
History	0.23798	0.25798	0.78697	1.00000	0.53946	0.31763
GPA	0.69735	0.76383	0.53362	0.53946	1.00000	0.56745
NSECH	0.57187	0.56351	0.30303	0.31763	0.56745	1.00000

The figure is a 6x6 scatter plot matrix titled "Scatter Plot". The variables are Math, Physics, English, History, GPA, and NSECH. The diagonal cells contain the variable names. The off-diagonal cells show scatter plots of pairs of variables. The axes are labeled with numerical values: Math (50, 70, 90), Physics (50, 70, 90), English (75, 85, 95), History (70, 100), GPA (3.5, 3.6, 3.7, 3.8, 3.9), and NSECH (2.5, 7.5, 12.5).

The CORR Procedure

4 Variables:	Math	Physics	English	History
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Covariance Matrix, DF = 39				
	Math	Physics	English	History
Math	88.71794872	80.64102564	8.34615385	17.87179487
Physics	80.64102564	98.04871795	18.23974359	20.36666667
English	8.34615385	18.23974359	41.63525641	40.48589744
History	17.87179487	20.36666667	40.48589744	63.56666667

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	40	79.50000	9.41902	3180	61.00000	99.00000
Physics	40	77.55000	9.90196	3102	51.00000	93.00000
English	40	86.57500	6.45254	3463	72.00000	97.00000
History	40	85.35000	7.97287	3414	65.00000	99.00000

Pearson Correlation Coefficients, N = 40 Prob > r under H0: Rho=0				
	Math	Physics	English	History
Math	1.00000	0.86463 <.0001	0.13733 0.3981	0.23798 0.1392
Physics	0.86463 <.0001	1.00000	0.28547 0.0742	0.25798 0.1080
English	0.13733 0.3981	0.28547 0.0742	1.00000	0.78697 <.0001
History	0.23798 0.1392	0.25798 0.1080	0.78697 <.0001	1.00000

Pearson Correlation Statistics (Fisher's z Transformation)							
Variable	With Variable	N	Sample Correlation	Fisher's z	95% Confidence Limits		p Value for H0:Rho=0
Math	Physics	40	0.86463	1.31140	0.757012	0.926574	<.0001
Math	English	40	0.13733	0.13820	-0.181968	0.430422	0.4006
Math	History	40	0.23798	0.24264	-0.079413	0.511569	0.1400
Physics	English	40	0.28547	0.29363	-0.028576	0.548231	0.0741
Physics	History	40	0.25798	0.26394	-0.058208	0.527127	0.1084
English	History	40	0.78697	1.06342	0.629874	0.882208	<.0001

The CORR Procedure

4 Variables:	Math	Physics	English	History
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Covariance Matrix, DF = 39				
	Math	Physics	English	History
Math	88.71794872	80.64102564	8.34615385	17.87179487
Physics	80.64102564	98.04871795	18.23974359	20.36666667
English	8.34615385	18.23974359	41.63525641	40.48589744
History	17.87179487	20.36666667	40.48589744	63.56666667

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	40	79.50000	9.41902	3180	61.00000	99.00000
Physics	40	77.55000	9.90196	3102	51.00000	93.00000
English	40	86.57500	6.45254	3463	72.00000	97.00000
History	40	85.35000	7.97287	3414	65.00000	99.00000

Pearson Correlation Coefficients, N = 40 Prob > r under H0: Rho=0				
	Math	Physics	English	History
Math	1.00000	0.86463 <.0001	0.13733 0.3981	0.23798 0.1392
Physics	0.86463 <.0001	1.00000	0.28547 0.0742	0.25798 0.1080
English	0.13733 0.3981	0.28547 0.0742	1.00000	0.78697 <.0001
History	0.23798 0.1392	0.25798 0.1080	0.78697 <.0001	1.00000

Pearson Correlation Statistics (Fisher's z Transformation)							
Variable	With Variable	N	Sample Correlation	Fisher's z	99.17% Confidence Limits		p Value for H0:Rho=0
Math	Physics	40	0.86463	1.31140	0.705249	0.940818	<.0001
Math	English	40	0.13733	0.13820	-0.287216	0.516772	0.4006
Math	History	40	0.23798	0.24264	-0.188799	0.589150	0.1400
Physics	English	40	0.28547	0.29363	-0.139186	0.621447	0.0741
Physics	History	40	0.25798	0.26394	-0.168172	0.602886	0.1084
English	History	40	0.78697	1.06342	0.557843	0.904632	<.0001

The CORR Procedure

6 Variables:	Math	Physics	English	History	GPA	NSECH
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Covariance Matrix, DF = 39						
	Math	Physics	English	History	GPA	NSECH
Math	88.71794872	80.64102564	8.34615385	17.87179487	0.59358974	18.03846154
Physics	80.64102564	98.04871795	18.23974359	20.36666667	0.68351282	18.68589744
English	8.34615385	18.23974359	41.63525641	40.48589744	0.31116667	6.54807692
History	17.87179487	20.36666667	40.48589744	63.56666667	0.38869231	8.48076923
GPA	0.59358974	0.68351282	0.31116667	0.38869231	0.00816692	0.17173077
NSECH	18.03846154	18.68589744	6.54807692	8.48076923	0.17173077	11.21474359

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	40	79.50000	9.41902	3180	61.00000	99.00000
Physics	40	77.55000	9.90196	3102	51.00000	93.00000
English	40	86.57500	6.45254	3463	72.00000	97.00000
History	40	85.35000	7.97287	3414	65.00000	99.00000
GPA	40	3.71150	0.09037	148.46000	3.46000	3.93000
NSECH	40	8.37500	3.34884	335.00000	3.00000	16.00000

varnames	xbar Math	mu0
Math	79.5	77.7
Physics	77.55	74.8
English	86.575	86.3
History	85.35	85.1
GPA	3.7115	3.62
NSECH	8.375	6.7

t2	f	fcrit	df1	df2	pval
107.29477	15.589838	2.3803127	6	34	1.6612E-8

varnames	LoI	UpI	LoB	UpB	LoT	UpT
Math	76.487651	82.512349	75.360451	83.639549	73.472167	85.527833
Physics	74.383201	80.716799	73.198206	81.901794	71.213106	83.886894
English	84.511378	88.638622	83.739185	89.410815	82.445608	90.704392
History	82.800152	87.899848	81.846017	88.853983	80.247651	90.452349
GPA	3.6825979	3.7404021	3.671783	3.751217	3.6536658	3.7693342
NSECH	7.3039883	9.4460117	6.903223	9.846777	6.2318619	10.518138

The MEANS Procedure

Vars=Engl

Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.0031866	0.0747687	0.8342990	1.1239861

Vars=GPA

Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.0252762	0.0249644	0.9558011	1.0856354

Vars=Hist

Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.0029377	0.0936883	0.7638073	1.1633373

Vars=Math

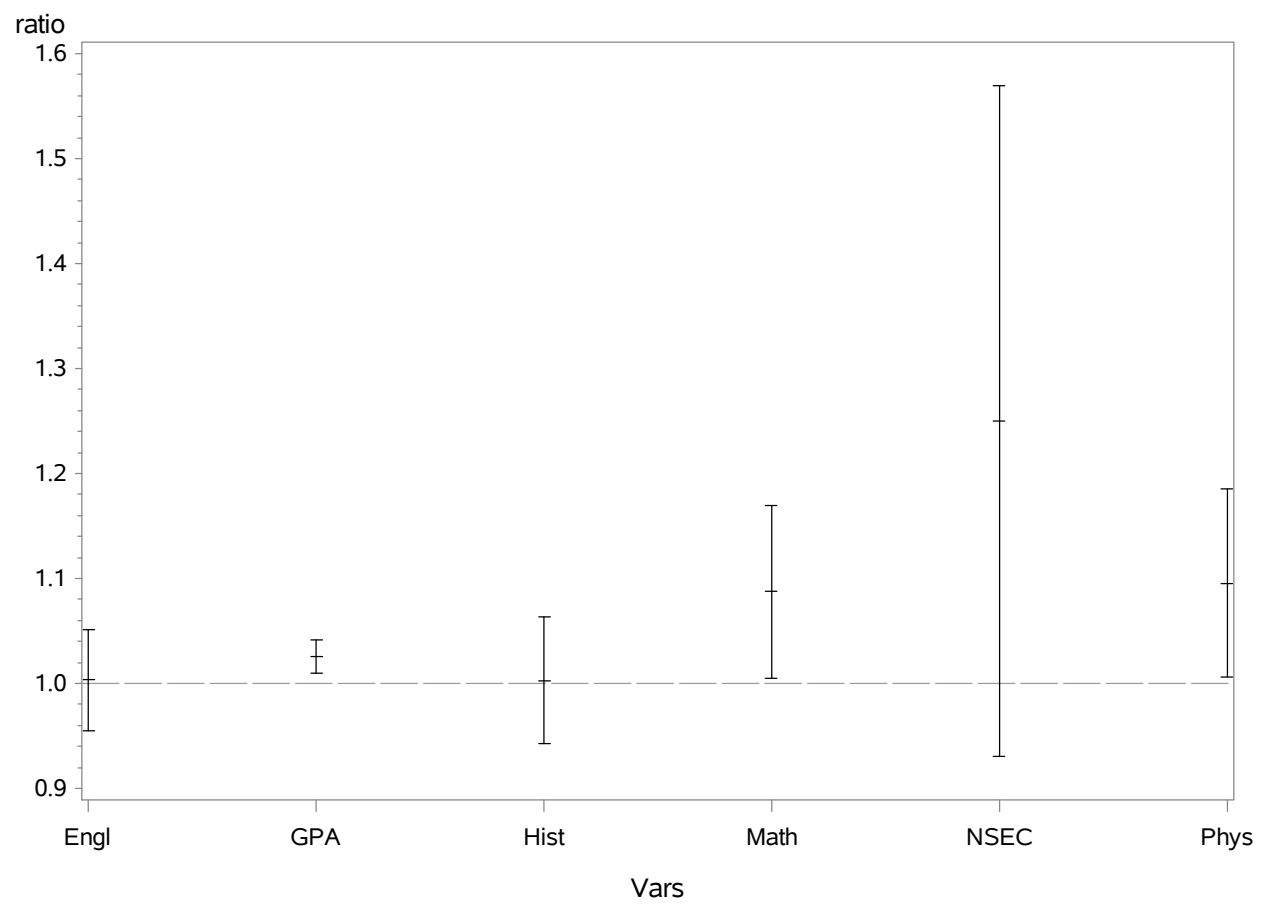
Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.0875513	0.1288512	0.8344733	1.3543092

Vars=NSEC

Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.2500000	0.4998272	0.4477612	2.3880597

Vars=Phys

Analysis Variable : Ratio				
N	Mean	Std Dev	Minimum	Maximum
40	1.0953390	0.1398581	0.7203390	1.3135593



The CORR Procedure

AdvM=No

4 Variables:	Math	Physics	English	History
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Covariance Matrix, DF = 19				
	Math	Physics	English	History
Math	47.71315789	51.69736842	2.15000000	3.38947368
Physics	51.69736842	86.51315789	12.19736842	6.36842105
English	2.15000000	12.19736842	50.57631579	57.77894737
History	3.38947368	6.36842105	57.77894737	91.74736842

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	20	73.65000	6.90747	1473	61.00000	88.00000
Physics	20	72.75000	9.30124	1455	51.00000	84.00000
English	20	85.55000	7.11170	1711	72.00000	97.00000
History	20	83.20000	9.57848	1664	65.00000	99.00000

The CORR Procedure

AdvM=Yes

4 Variables:	Math	Physics	English	History
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Covariance Matrix, DF = 19				
	Math	Physics	English	History
Math	62.34473684	54.71315789	2.35789474	6.81578947
Physics	54.71315789	66.23947368	14.88421053	13.71052632
English	2.35789474	14.88421053	32.67368421	20.68421053
History	6.81578947	13.71052632	20.68421053	29.00000000

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Math	20	85.35000	7.89587	1707	70.00000	99.00000
Physics	20	82.35000	8.13876	1647	64.00000	93.00000
English	20	87.60000	5.71609	1752	76.00000	96.00000
History	20	87.50000	5.38516	1750	79.00000	99.00000

varnames	xbar1 Math	xbar2
Math	73.65	85.35
Physics	72.75	82.35
English	85.55	87.6
History	83.2	87.5

	S1 Col1	Col2	Col3	Col4	S2 Col5	Col6	Col7	Col8
ROW1	47.713158	51.697368	2.15	3.3894737	62.344737	54.713158	2.3578947	6.8157895
ROW2	51.697368	86.513158	12.197368	6.3684211	54.713158	66.239474	14.884211	13.710526
ROW3	2.15	12.197368	50.576316	57.778947	2.3578947	14.884211	32.673684	20.684211
ROW4	3.3894737	6.3684211	57.778947	91.747368	6.8157895	13.710526	20.684211	29

Sp			
55.028947	53.205263	2.2539474	5.1026316
53.205263	76.376316	13.540789	10.039474
2.2539474	13.540789	41.625	39.231579
5.1026316	10.039474	39.231579	60.373684

t2	fstat	df1	df2	pval
28.224229	6.4990001	4	35	0.0005078

varnames	LoI	UpI	LoB	UpB	LoT	UpT
Math	-16.44887	-6.951126	-17.85122	-5.54878	-19.64522	-3.754782
Physics	-15.19467	-4.005331	-16.84678	-2.353221	-18.9603	-0.239704
English	-6.180211	2.0802106	-7.399865	3.2998648	-8.960148	4.8601479
History	-9.27415	0.6741504	-10.74302	2.1430206	-12.62212	4.0221216

The GLM Procedure

Class Level Information		
Class	Levels	Values
AdvM	2	No Yes

Number of Observations Read	40
Number of Observations Used	40

The GLM Procedure

Dependent Variable: Math

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	1368.900000	1368.900000	24.88	<.0001
Error	38	2091.100000	55.028947		
Corrected Total	39	3460.000000			

R-Square	Coeff Var	Root MSE	Math Mean
0.395636	9.331006	7.418150	79.50000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
AdvM	1	1368.900000	1368.900000	24.88	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
AdvM	1	1368.900000	1368.900000	24.88	<.0001

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
Difference	1	1368.900000	1368.900000	24.88	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Difference	-11.7000000	2.34582496	-4.99	<.0001

The GLM Procedure

Dependent Variable: Physics

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	921.600000	921.600000	12.07	0.0013
Error	38	2902.300000	76.376316		
Corrected Total	39	3823.900000			

R-Square	Coeff Var	Root MSE	Physics Mean
0.241010	11.26932	8.739354	77.55000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
AdvM	1	921.6000000	921.6000000	12.07	0.0013

Source	DF	Type III SS	Mean Square	F Value	Pr > F
AdvM	1	921.6000000	921.6000000	12.07	0.0013

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
Difference	1	921.6000000	921.6000000	12.07	0.0013

Parameter	Estimate	Standard Error	t Value	Pr > t
Difference	-9.60000000	2.76362653	-3.47	0.0013

The GLM Procedure

Dependent Variable: English

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	42.025000	42.025000	1.01	0.3214
Error	38	1581.750000	41.625000		
Corrected Total	39	1623.775000			

R-Square	Coeff Var	Root MSE	English Mean
0.025881	7.452202	6.451744	86.57500

Source	DF	Type I SS	Mean Square	F Value	Pr > F
AdvM	1	42.02500000	42.02500000	1.01	0.3214

Source	DF	Type III SS	Mean Square	F Value	Pr > F
AdvM	1	42.02500000	42.02500000	1.01	0.3214

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
Difference	1	42.02500000	42.02500000	1.01	0.3214

Parameter	Estimate	Standard Error	t Value	Pr > t
Difference	-2.05000000	2.04022058	-1.00	0.3214

The GLM Procedure

Dependent Variable: History

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	184.900000	184.900000	3.06	0.0882
Error	38	2294.200000	60.373684		
Corrected Total	39	2479.100000			

R-Square	Coeff Var	Root MSE	History Mean
0.074584	9.103750	7.770050	85.35000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
AdvM	1	184.9000000	184.9000000	3.06	0.0882

Source	DF	Type III SS	Mean Square	F Value	Pr > F
AdvM	1	184.9000000	184.9000000	3.06	0.0882

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
Difference	1	184.9000000	184.9000000	3.06	0.0882

Parameter	Estimate	Standard Error	t Value	Pr > t
Difference	-4.30000000	2.45710570	-1.75	0.0882

The GLM Procedure
Multivariate Analysis of Variance

E = Error SSCP Matrix				
	Math	Physics	English	History
Math	2091.1	2021.8	85.65	193.9
Physics	2021.8	2902.3	514.55	381.5
English	85.65	514.55	1581.75	1490.8
History	193.9	381.5	1490.8	2294.2

Partial Correlation Coefficients from the Error SSCP Matrix / Prob > r				
DF = 38	Math	Physics	English	History
Math	1.000000	0.820691 <.0001	0.047095 0.7759	0.088527 0.5920
Physics	0.820691 <.0001	1.000000	0.240153 0.1409	0.147845 0.3691
English	0.047095 0.7759	0.240153 0.1409	1.000000	0.782591 <.0001
History	0.088527 0.5920	0.147845 0.3691	0.782591 <.0001	1.000000

The GLM Procedure
Multivariate Analysis of Variance

H = Type III SSCP Matrix for AdvM				
	Math	Physics	English	History
Math	1368.9	1123.2	239.85	503.1
Physics	1123.2	921.6	196.8	412.8
English	239.85	196.8	42.025	88.15
History	503.1	412.8	88.15	184.9

Characteristic Roots and Vectors of: E Inverse * H, where H = Type III SSCP Matrix for AdvM E = Error SSCP Matrix					
Characteristic Root	Percent	Characteristic Vector V'EV=1			
		Math	Physics	English	History
0.74274286	100.00	0.02786274	-0.00812904	0.00091540	0.00527934
0.00000000	0.00	-0.01475944	0.01021609	-0.03560975	0.03432812
0.00000000	0.00	-0.02591855	0.03141917	0.00079171	0.00000000
0.00000000	0.00	0.00465239	-0.01125210	0.02614008	0.00000000

MANOVA Test Criteria and Exact F Statistics for the Hypothesis of No Overall AdvMEffect H = Type III SSCP Matrix for AdvM E = Error SSCP Matrix					
S=1 M=1 N=16.5					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.57380812	6.50	4	35	0.0005
Pillai's Trace	0.42619188	6.50	4	35	0.0005
Hotelling-Lawley Trace	0.74274286	6.50	4	35	0.0005
Roy's Greatest Root	0.74274286	6.50	4	35	0.0005

H = Contrast SSCP Matrix for Difference				
	Math	Physics	English	History
Math	1368.9	1123.2	239.85	503.1
Physics	1123.2	921.6	196.8	412.8
English	239.85	196.8	42.025	88.15
History	503.1	412.8	88.15	184.9

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where H = Contrast SSCP Matrix for Difference E = Error SSCP Matrix					
Characteristic Root	Percent	Characteristic Vector V'EV=1			
		Math	Physics	English	History
0.74274286	100.00	0.02786274	-0.00812904	0.00091540	0.00527934
0.00000000	0.00	-0.01475944	0.01021609	-0.03560975	0.03432812
0.00000000	0.00	-0.02591855	0.03141917	0.00079171	0.00000000
0.00000000	0.00	0.00465239	-0.01125210	0.02614008	0.00000000

MANOVA Test Criteria and Exact F Statistics for the Hypothesis of No Overall Difference Effect H = Contrast SSCP Matrix for Difference E = Error SSCP Matrix S=1 M=1 N=16.5					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.57380812	6.50	4	35	0.0005
Pillai's Trace	0.42619188	6.50	4	35	0.0005
Hotelling-Lawley Trace	0.74274286	6.50	4	35	0.0005
Roy's Greatest Root	0.74274286	6.50	4	35	0.0005

The CORR Procedure

AdvM=No

4 Variables:	rMath	rPhysics	rEnglish	rHistory
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Covariance Matrix, DF = 19				
	rMath	rPhysics	rEnglish	rHistory
rMath	47.71315789	51.69736842	2.15000000	3.38947368
rPhysics	51.69736842	86.51315789	12.19736842	6.36842105
rEnglish	2.15000000	12.19736842	50.57631579	57.77894737
rHistory	3.38947368	6.36842105	57.77894737	91.74736842

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
rMath	20	0	6.90747	0	-12.65000	14.35000
rPhysics	20	0	9.30124	0	-21.75000	11.25000
rEnglish	20	0	7.11170	0	-13.55000	11.45000
rHistory	20	0	9.57848	0	-18.20000	15.80000

Pearson Correlation Coefficients, N = 20 Prob > r under H0: Rho=0				
	rMath	rPhysics	rEnglish	rHistory
rMath	1.00000	0.80465 <.0001	0.04377 0.8546	0.05123 0.8302
rPhysics	0.80465 <.0001	1.00000	0.18440 0.4364	0.07148 0.7646
rEnglish	0.04377 0.8546	0.18440 0.4364	1.00000	0.84820 <.0001
rHistory	0.05123 0.8302	0.07148 0.7646	0.84820 <.0001	1.00000

The CORR Procedure

AdvM=Yes

4 Variables:	rMath	rPhysics	rEnglish	rHistory
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Covariance Matrix, DF = 19				
	rMath	rPhysics	rEnglish	rHistory
rMath	62.34473684	54.71315789	2.35789474	6.81578947
rPhysics	54.71315789	66.23947368	14.88421053	13.71052632
rEnglish	2.35789474	14.88421053	32.67368421	20.68421053
rHistory	6.81578947	13.71052632	20.68421053	29.00000000

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
rMath	20	0	7.89587	0	-15.35000	13.65000
rPhysics	20	0	8.13876	0	-18.35000	10.65000
rEnglish	20	0	5.71609	0	-11.60000	8.40000
rHistory	20	0	5.38516	0	-8.50000	11.50000

Pearson Correlation Coefficients, N = 20 Prob > r under H0: Rho=0				
	rMath	rPhysics	rEnglish	rHistory
rMath	1.00000	0.85140 <.0001	0.05224 0.8269	0.16029 0.4996
rPhysics	0.85140 <.0001	1.00000	0.31994 0.1691	0.31282 0.1793
rEnglish	0.05224 0.8269	0.31994 0.1691	1.00000	0.67196 0.0012
rHistory	0.16029 0.4996	0.31282 0.1793	0.67196 0.0012	1.00000

The DISCRIM Procedure

Total Sample Size	40	DF Total	39
Variables	4	DF Within Classes	38
Classes	2	DF Between Classes	1

Number of Observations Read	40
Number of Observations Used	40

Class Level Information					
AdvM	Variable Name	Frequency	Weight	Proportion	Prior Probability
No	No	20	20.0000	0.500000	0.500000
Yes	Yes	20	20.0000	0.500000	0.500000

Within Covariance Matrix Information		
AdvM	Covariance Matrix Rank	Natural Log of the Determinant of the Covariance Matrix
No	4	14.28119
Yes	4	12.93266
Pooled	4	13.90007

The DISCRIM Procedure
Test of Homogeneity of Within Covariance Matrices

Chi-Square	DF	Pr > ChiSq
9.878987	10	0.4512

Since the Chi-Square value is not significant at the 0.1 level, a pooled covariance matrix will be used in the discriminant function.

Reference: Morrison, D.F. (1976) Multivariate Statistical Methods p252.

The DISCRIM Procedure

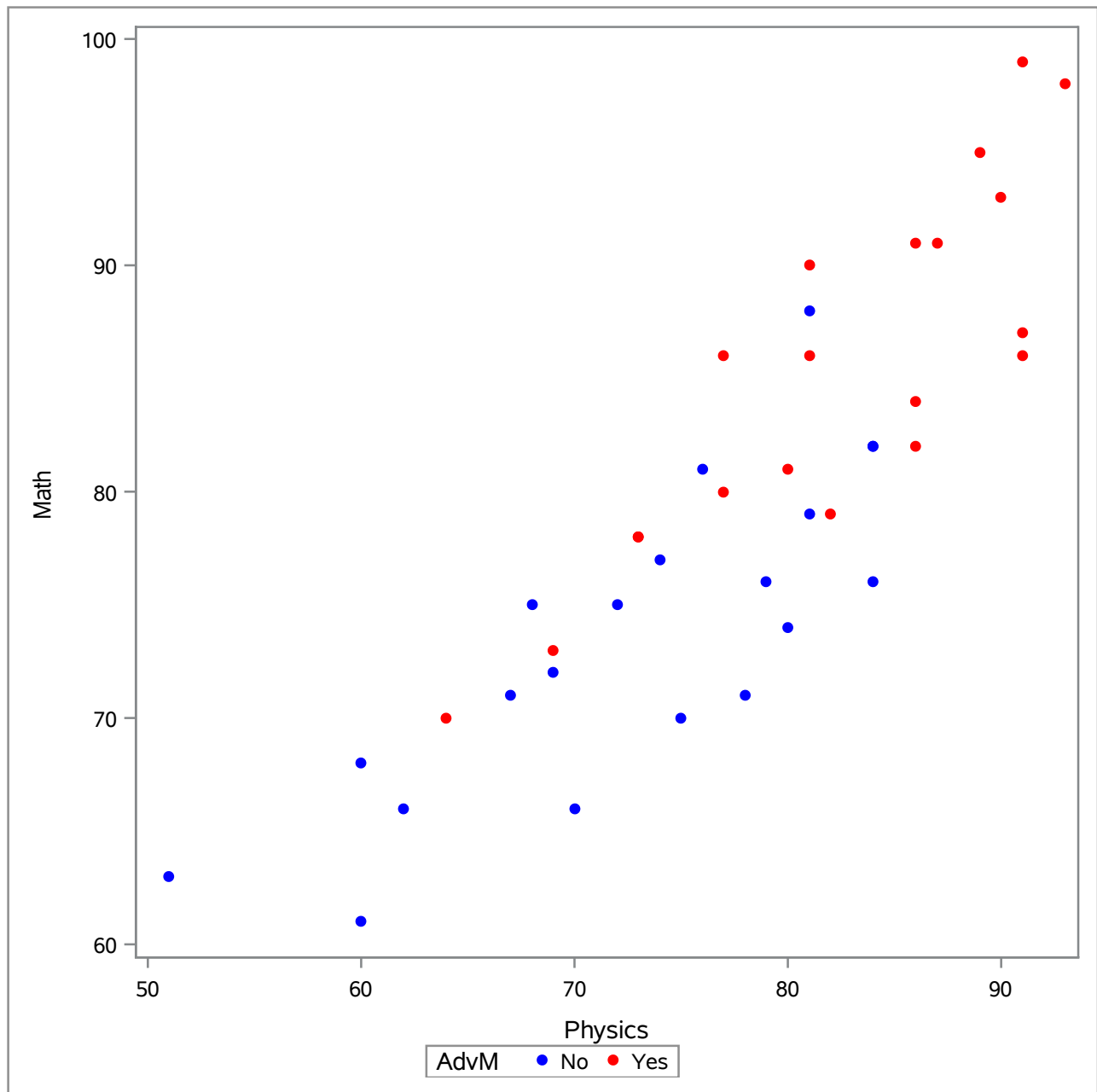
Generalized Squared Distance to AdvM		
From AdvM	No	Yes
No	0	2.82242
Yes	2.82242	0

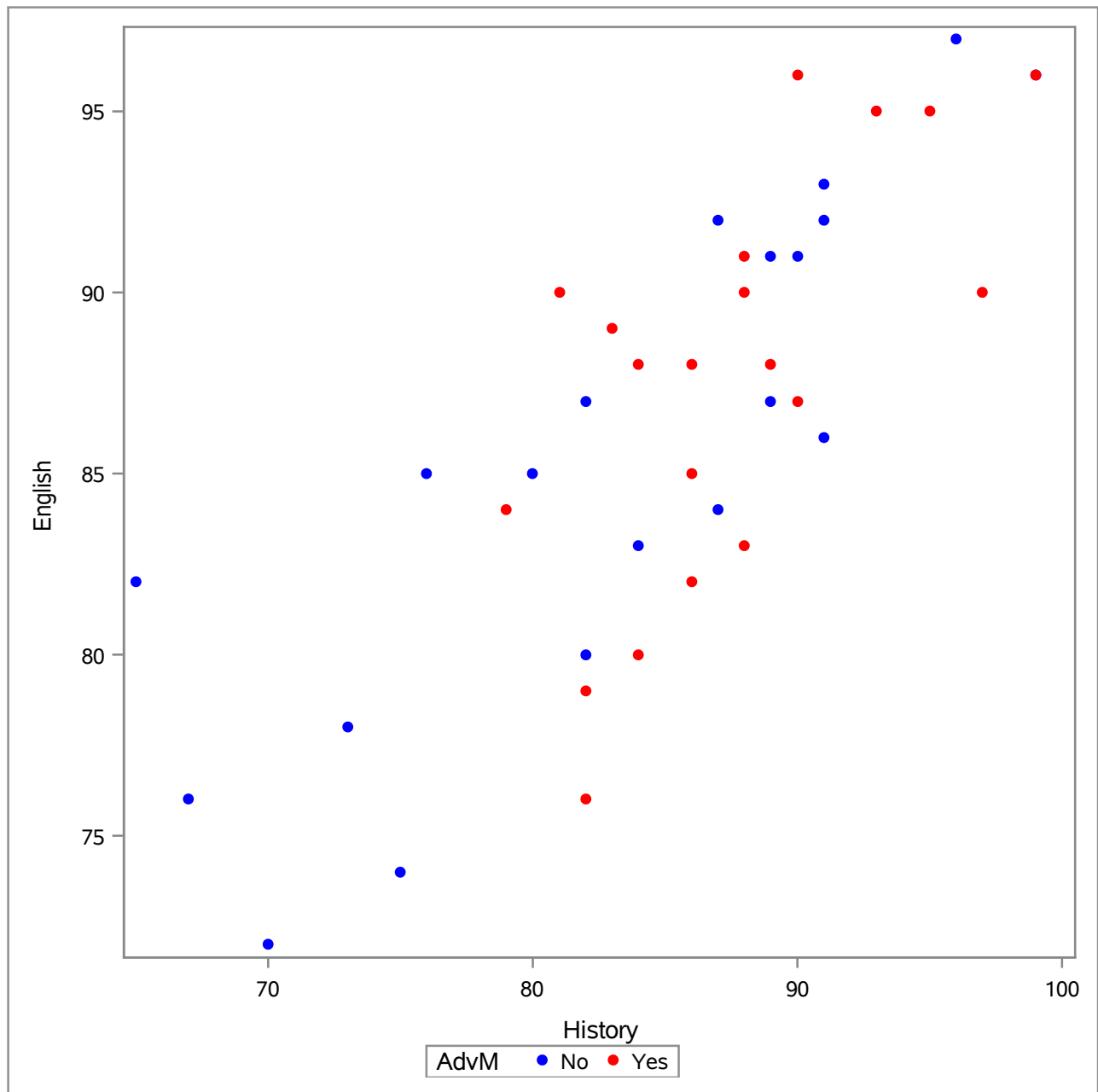
Linear Discriminant Function for AdvM		
Variable	No	Yes
Constant	-142.40965	-164.30820
Math	2.26747	2.55602
Physics	-1.04034	-1.12453
English	2.55354	2.56302
History	-0.29988	-0.24521

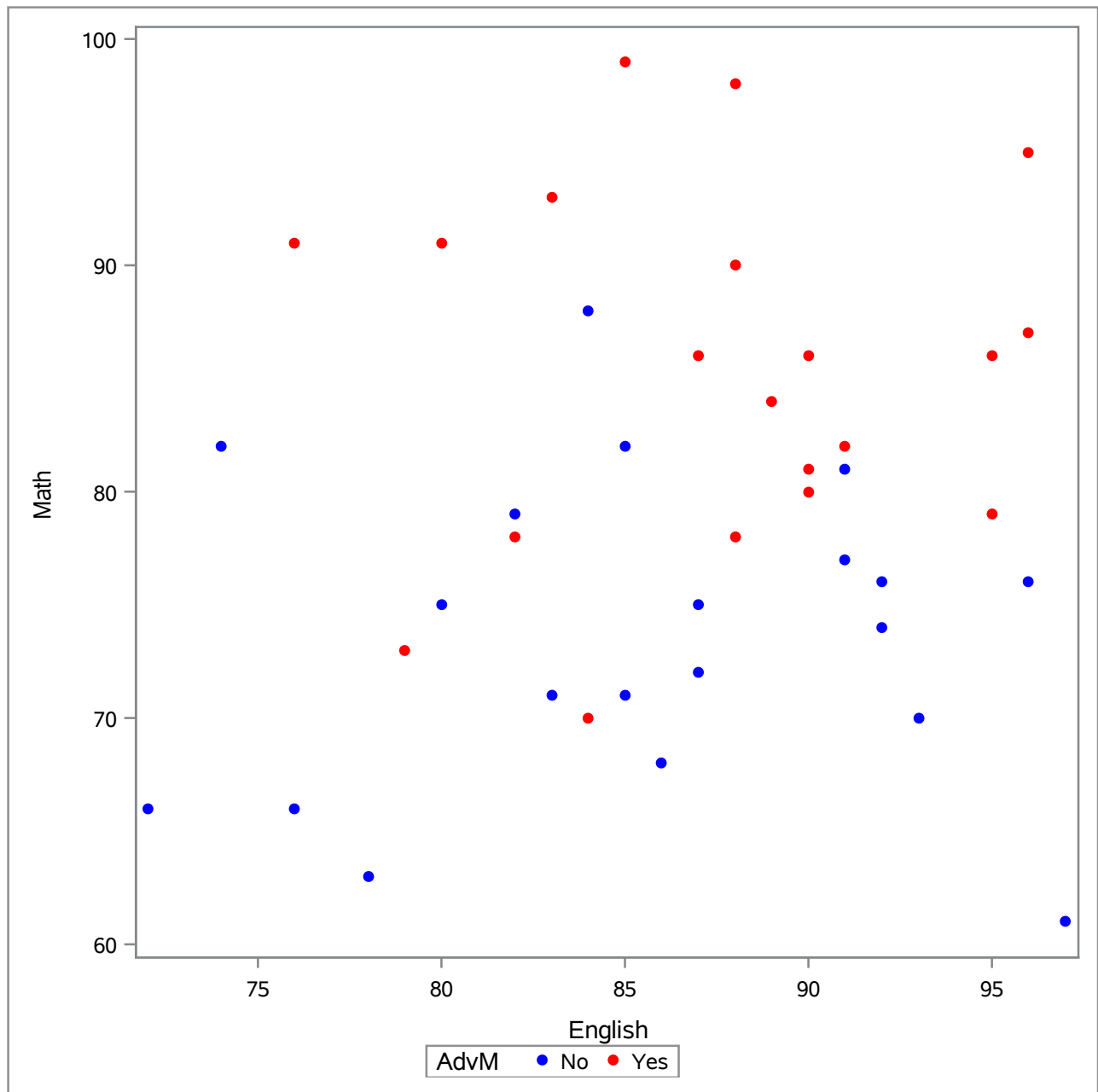
The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Resubstitution Summary using Linear Discriminant Function

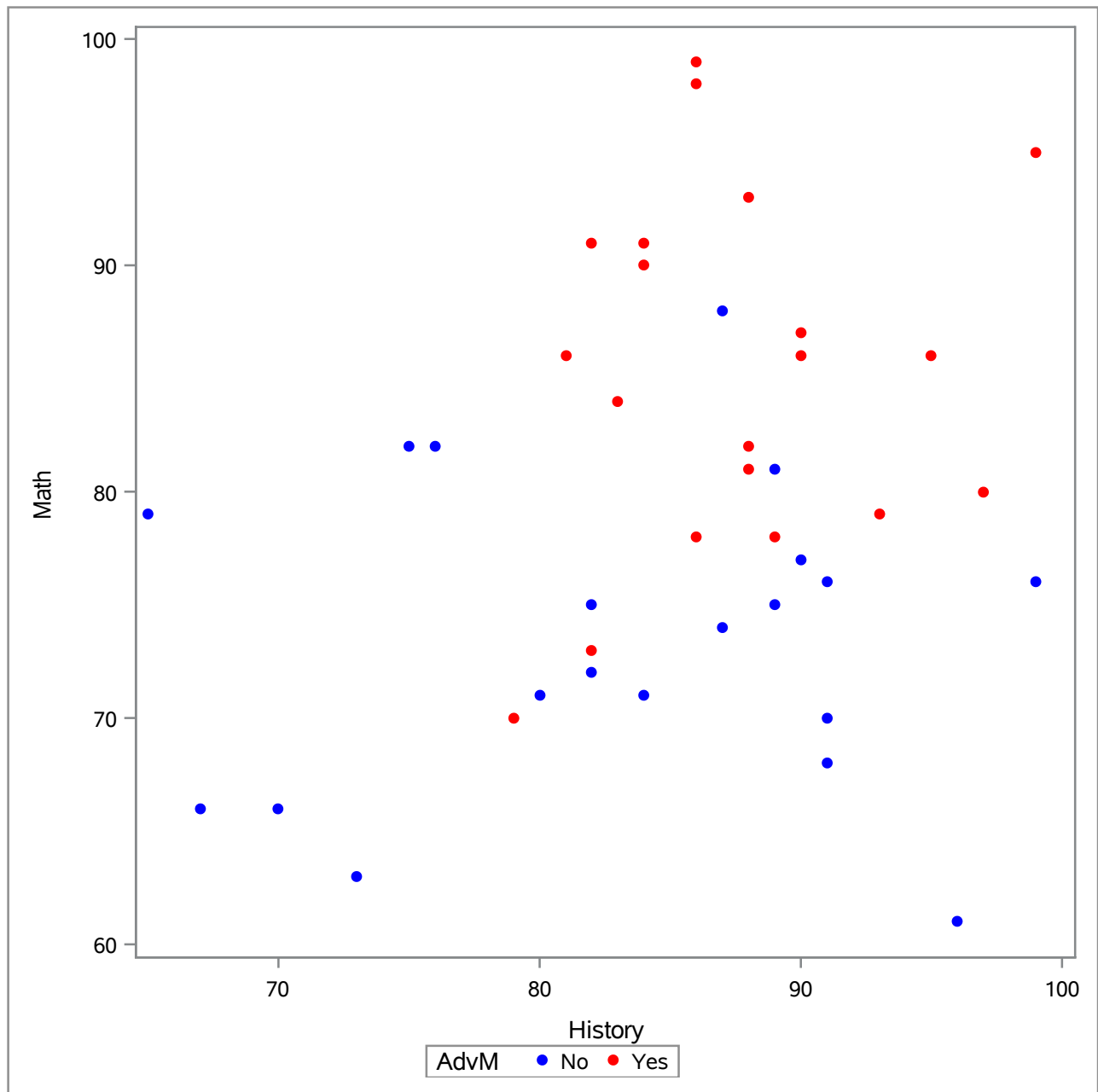
Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	18 90.00	2 10.00	20 100.00
Yes	4 20.00	16 80.00	20 100.00
Total	22 55.00	18 45.00	40 100.00
Priors	0.5	0.5	

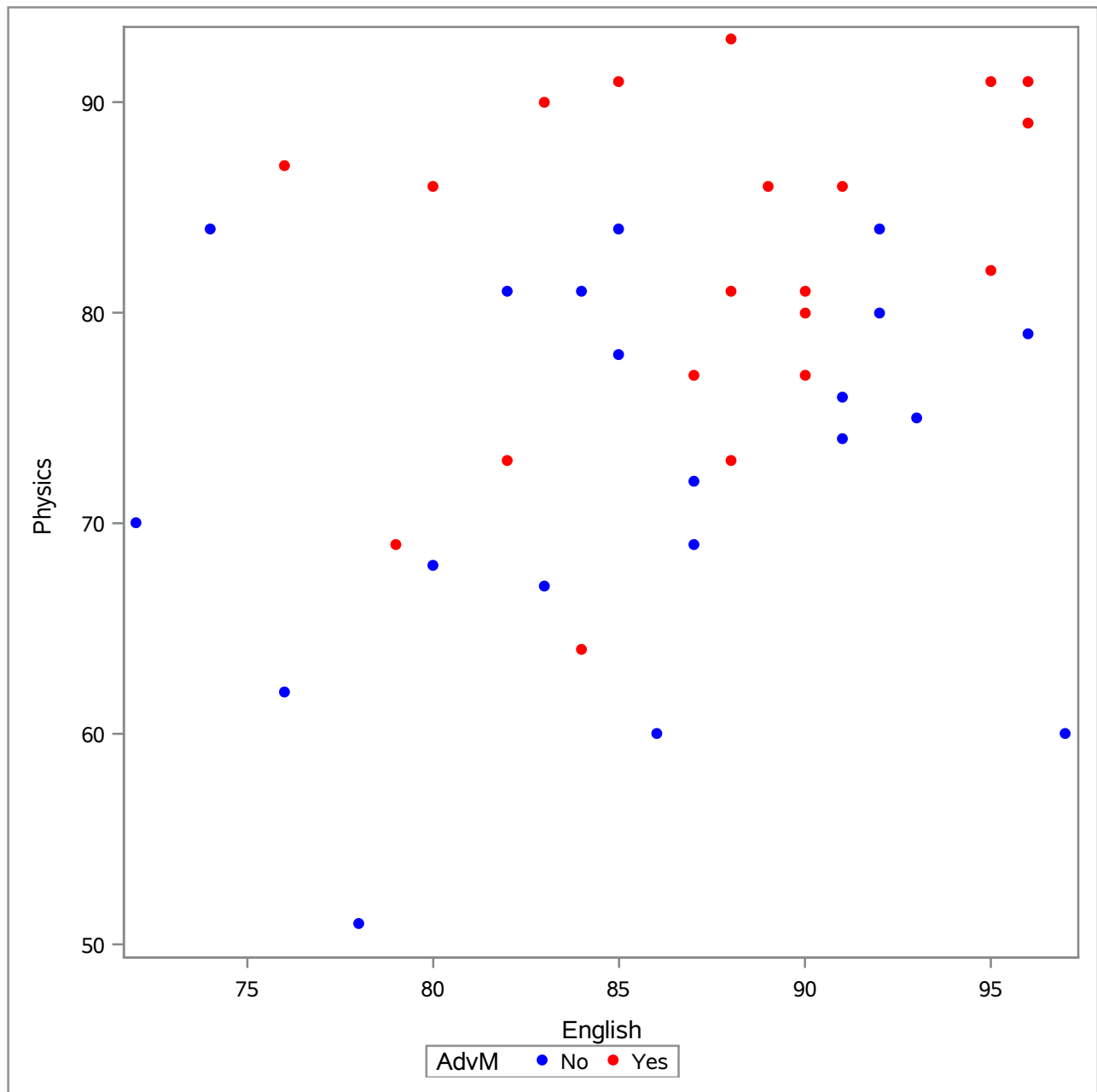
Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.1000	0.2000	0.1500
Priors	0.5000	0.5000	

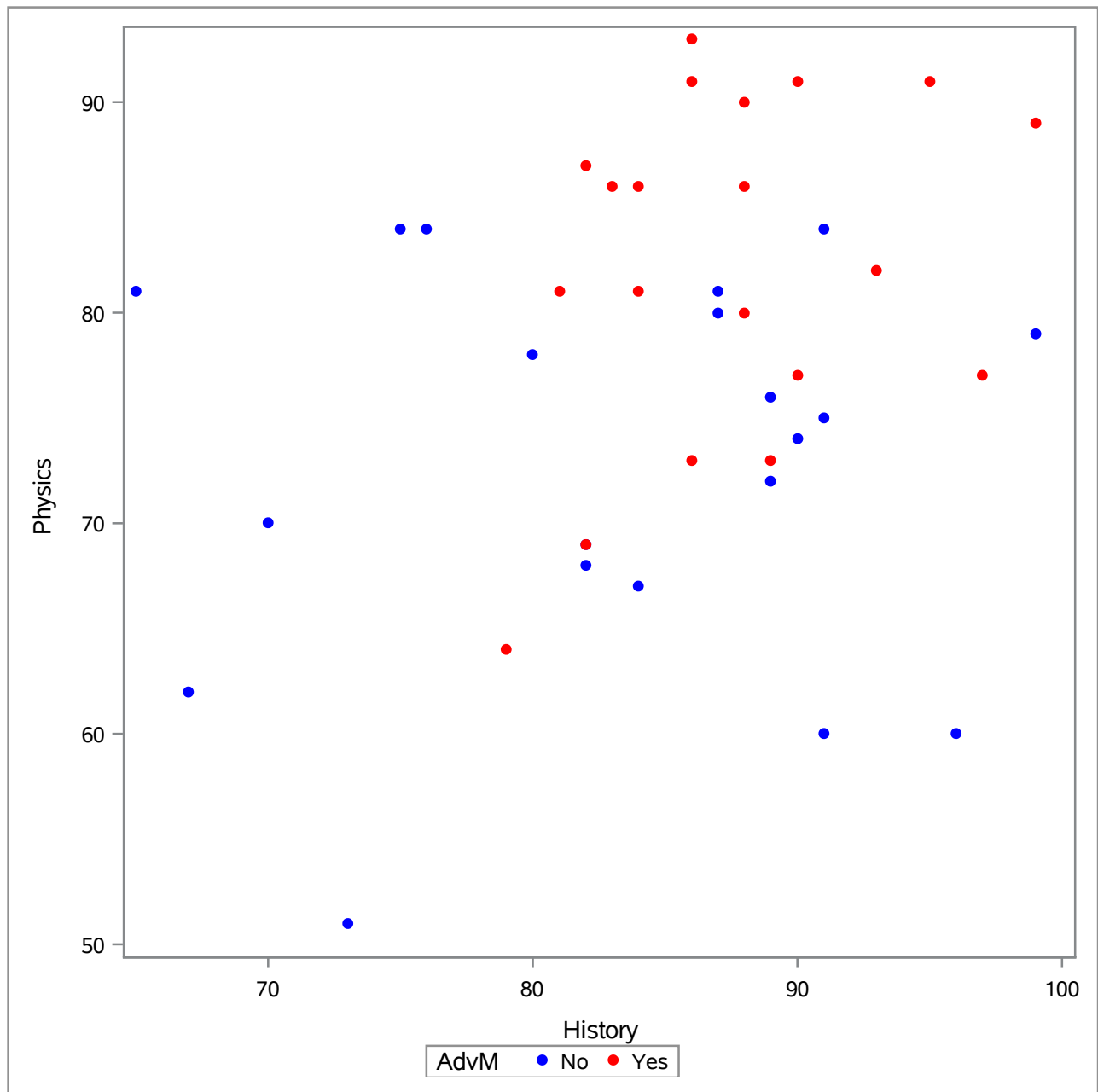


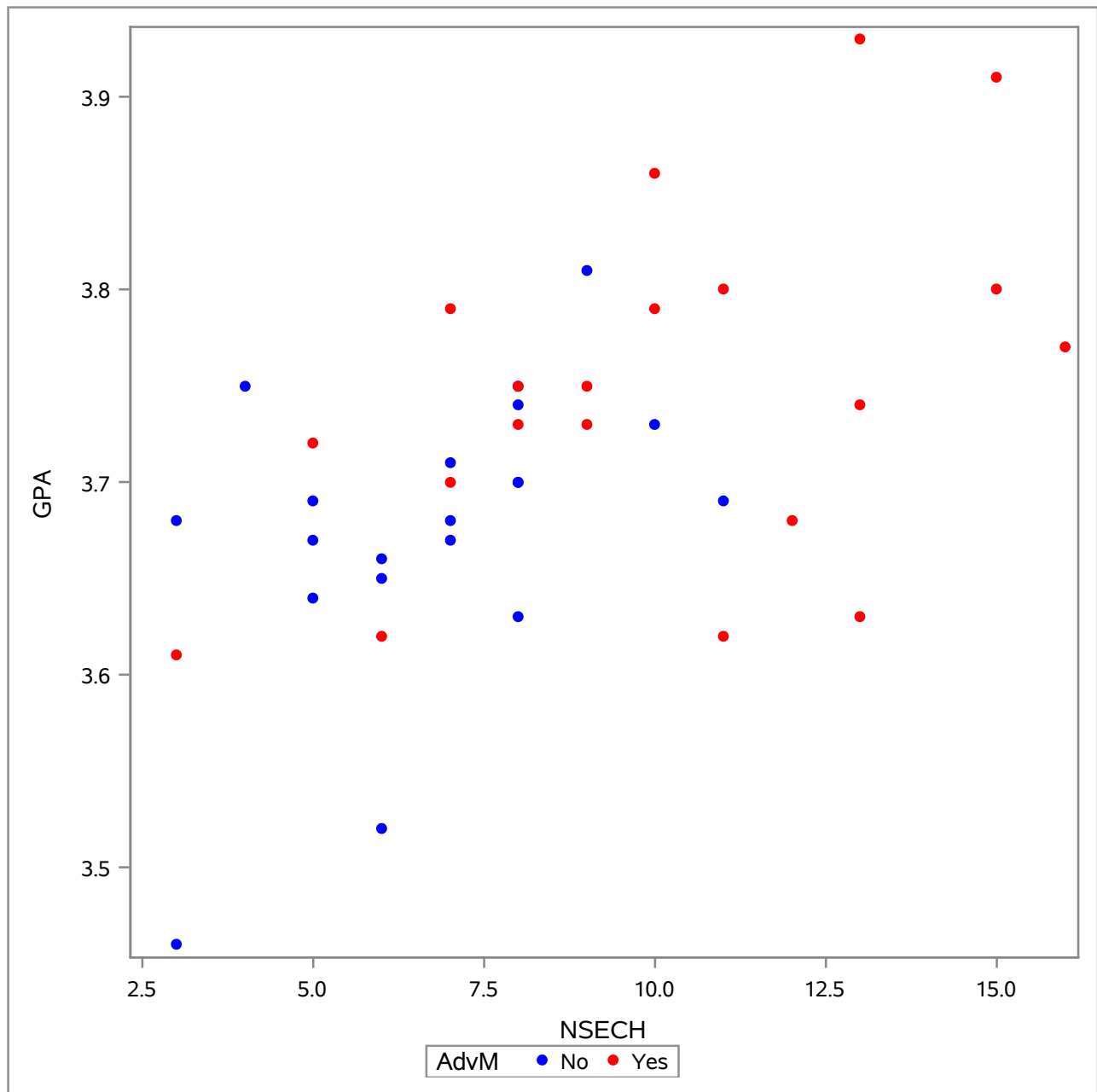












The DISCRIM Procedure

Total Sample Size	40	DF Total	39
Variables	6	DF Within Classes	38
Classes	2	DF Between Classes	1

Number of Observations Read	40
Number of Observations Used	40

Class Level Information					
AdvM	Variable Name	Frequency	Weight	Proportion	Prior Probability
No	No	20	20.0000	0.500000	0.500000
Yes	Yes	20	20.0000	0.500000	0.500000

Within Covariance Matrix Information		
AdvM	Covariance Matrix Rank	Natural Log of the Determinant of the Covariance Matrix
No	6	9.19622
Yes	6	8.83806
Pooled	6	9.66555

The DISCRIM Procedure
Test of Homogeneity of Within Covariance Matrices

Chi-Square	DF	Pr > ChiSq
20.517475	21	0.4887

Since the Chi-Square value is not significant at the 0.1 level, a pooled covariance matrix will be used in the discriminant function.

Reference: Morrison, D.F. (1976) Multivariate Statistical Methods p252.

The DISCRIM Procedure

Generalized Squared Distance to AdvM		
From AdvM	No	Yes
No	1.38629	4.85433
Yes	4.85433	1.38629

Linear Discriminant Function for AdvM		
Variable	No	Yes
Constant	-1899	-1887
Math	-1.19676	-0.89340
Physics	-5.55718	-5.61701
English	-0.92258	-0.89944
History	-3.26909	-3.19034
GPA	1273	1261
NSECH	-5.73978	-5.47044

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Resubstitution Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	18 90.00	2 10.00	20 100.00
Yes	4 20.00	16 80.00	20 100.00
Total	22 55.00	18 45.00	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.1000	0.2000	0.1500
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Cross-validation Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	17 85.00	3 15.00	20 100.00
Yes	5 25.00	15 75.00	20 100.00
Total	22 55.00	18 45.00	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.1500	0.2500	0.2000
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Test Data: WORK.SDTEST
Classification Summary using Linear Discriminant Function

Observation Profile for Test Data	
Number of Observations Read	5
Number of Observations Used	5

Number of Observations and Percent Classified into AdvM			
	No	Yes	Total
Total	1 20.00	4 80.00	5 100.00
Priors	0.5	0.5	

Obs	Math	Physics	English	History	GPA	NSECH	No	Yes	_INTO_
1	96	94	90	91	3.83	12	0.01513	0.98487	Yes
2	82	77	89	88	3.69	6	0.34058	0.65942	Yes
3	74	73	93	87	3.65	5	0.79050	0.20950	No
4	94	90	80	75	3.70	7	0.07965	0.92035	Yes
5	85	77	97	90	3.68	8	0.07138	0.92862	Yes

The DISCRIM Procedure

Total Sample Size	40	DF Total	39
Variables	4	DF Within Classes	38
Classes	2	DF Between Classes	1

Number of Observations Read	40
Number of Observations Used	40

Class Level Information					
AdvM	Variable Name	Frequency	Weight	Proportion	Prior Probability
No	No	20	20.0000	0.500000	0.500000
Yes	Yes	20	20.0000	0.500000	0.500000

Within Covariance Matrix Information		
AdvM	Covariance Matrix Rank	Natural Log of the Determinant of the Covariance Matrix
No	4	14.28119
Yes	4	12.93266
Pooled	4	13.90007

The DISCRIM Procedure
Test of Homogeneity of Within Covariance Matrices

Chi-Square	DF	Pr > ChiSq
9.878987	10	0.4512

Since the Chi-Square value is not significant at the 0.1 level, a pooled covariance matrix will be used in the discriminant function.

Reference: Morrison, D.F. (1976) Multivariate Statistical Methods p252.

The DISCRIM Procedure

Generalized Squared Distance to AdvM		
From AdvM	No	Yes
No	1.38629	4.20872
Yes	4.20872	1.38629

Linear Discriminant Function for AdvM		
Variable	No	Yes
Constant	-143.10279	-165.00135
Math	2.26747	2.55602
Physics	-1.04034	-1.12453
English	2.55354	2.56302
History	-0.29988	-0.24521

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Resubstitution Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	18 90.00	2 10.00	20 100.00
Yes	4 20.00	16 80.00	20 100.00
Total	22 55.00	18 45.00	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.1000	0.2000	0.1500
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Cross-validation Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	16 80.00	4 20.00	20 100.00
Yes	4 20.00	16 80.00	20 100.00
Total	20 50.00	20 50.00	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.2000	0.2000	0.2000
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Test Data: WORK.SDTEST
Classification Summary using Linear Discriminant Function

Observation Profile for Test Data	
Number of Observations Read	5
Number of Observations Used	5

Number of Observations and Percent Classified into AdvM			
	No	Yes	Total
Total	1 20.00	4 80.00	5 100.00
Priors	0.5	0.5	

Obs	Math	Physics	English	History	GPA	NSECH	No	Yes	_INTO_
1	96	94	90	91	3.83	12	0.02371	0.97629	Yes
2	82	77	89	88	3.69	6	0.28180	0.71820	Yes
3	74	73	93	87	3.65	5	0.74133	0.25867	No
4	94	90	80	75	3.70	7	0.07532	0.92468	Yes
5	85	77	97	90	3.68	8	0.12064	0.87936	Yes

The DISCRIM Procedure

Total Sample Size	40	DF Total	39
Variables	2	DF Within Classes	38
Classes	2	DF Between Classes	1

Number of Observations Read	40
Number of Observations Used	40

Class Level Information					
AdvM	Variable Name	Frequency	Weight	Proportion	Prior Probability
No	No	20	20.0000	0.500000	0.500000
Yes	Yes	20	20.0000	0.500000	0.500000

Within Covariance Matrix Information		
AdvM	Covariance Matrix Rank	Natural Log of the Determinant of the Covariance Matrix
No	2	7.28290
Yes	2	7.03540
Pooled	2	7.22410

The DISCRIM Procedure
Test of Homogeneity of Within Covariance Matrices

Chi-Square	DF	Pr > ChiSq
2.327499	3	0.5073

Since the Chi-Square value is not significant at the 0.1 level, a pooled covariance matrix will be used in the discriminant function.

Reference: Morrison, D.F. (1976) Multivariate Statistical Methods p252.

The DISCRIM Procedure

Generalized Squared Distance to AdvM		
From AdvM	No	Yes
No	1.38629	3.99148
Yes	3.99148	1.38629

Linear Discriminant Function for AdvM		
Variable	No	Yes
Constant	-50.02684	-66.88274
Math	1.27864	1.55765
Physics	0.06179	-0.00688

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Resubstitution Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	16 80.00	4 20.00	20 100.00
Yes	5 25.00	15 75.00	20 100.00
Total	21 52.50	19 47.50	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.2000	0.2500	0.2250
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Calibration Data: WORK.STUDENTDATA
Cross-validation Summary using Linear Discriminant Function

Number of Observations and Percent Classified into AdvM			
From AdvM	No	Yes	Total
No	16 80.00	4 20.00	20 100.00
Yes	6 30.00	14 70.00	20 100.00
Total	22 55.00	18 45.00	40 100.00
Priors	0.5	0.5	

Error Count Estimates for AdvM			
	No	Yes	Total
Rate	0.2000	0.3000	0.2500
Priors	0.5000	0.5000	

The DISCRIM Procedure
Classification Summary for Test Data: WORK.SDTEST
Classification Summary using Linear Discriminant Function

Observation Profile for Test Data	
Number of Observations Read	5
Number of Observations Used	5

Number of Observations and Percent Classified into AdvM			
	No	Yes	Total
Total	1 20.00	4 80.00	5 100.00
Priors	0.5	0.5	

Obs	Math	Physics	English	History	GPA	NSECH	No	Yes	_INTO_
1	96	94	90	91	3.83	12	0.03006	0.96994	Yes
2	82	77	89	88	3.69	6	0.32403	0.67597	Yes
3	74	73	93	87	3.65	5	0.77243	0.22757	No
4	94	90	80	75	3.70	7	0.03952	0.96048	Yes
5	85	77	97	90	3.68	8	0.17189	0.82811	Yes