James Hahn
STAT1221
Homework #7
MINITAB Output

Chapter 13

13b + 13c)

Regression Analysis: SPY versus SPX, Z1, Z2

Method

Categorical predictor coding (1, 0)

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	5	219.943	43.989	2.25	0.137
SPX	1	6.754	6.754	0.35	0.571
Z1	1	42.260	42.260	2.16	0.175
Z2	1	37.966	37.966	1.94	0.197
SPX*Z1	1	32.533	32.533	1.67	0.229
SPX*Z2	1	33.864	33.864	1.73	0.220
Error	9	175.790	19.532		
Total	14	395.733			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
4.41953	55.58%	30.90%	3.27%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	31.9	24.4	1.31	0.224	
SPX	-0.407	0.692	-0.59	0.571	16.31
Z1					
1	-40.0	27.2	-1.47	0.175	125.97
Z2					
1	-36.3	26.0	-1.39	0.197	115.66

SPX*Z1					
1	0.980	0.759	1.29	0.229	143.57
SPX*Z2					
1	0.998	0.758	1.32	0.220	85.03

Regression Equation

Z1	Z2			
0	0	SPY	=	31.9 - 0.407 SPX
0	1	SPY	=	-4.37 + 0.591 SPX
1	0	SPY	=	-8.0 + 0.573 SPX
1	1	SPY	=	-44.3 + 1.571 SPX

Regression Analysis: SPY versus SPX, Z1, Z2

Method

Categorical predictor coding (1, 0)

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	183.666	61.222	3.18	0.067
SPX	1	107.532	107.532	5.58	0.038
Z1	1	67.883	67.883	3.52	0.087
Z2	1	6.852	6.852	0.36	0.563
Error	11	212.068	19.279		
Total	14	395.733			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
4.39077	46.41%	31.80%	5.96%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	0.30	7.58	0.04	0.969	
SPX	0.491	0.208	2.36	0.038	1.49
Z1					

1	-5.28	2.81	-1.88	0.087	1.37
Z2					
1	-1.86	3.12	-0.60	0.563	1.68

Regression Equation

Z1	Z2			
0	0	SPY	=	0.30 + 0.491 SPX
0	1	SPY	=	-1.56 + 0.491 SPX
1	0	SPY	=	-4.98 + 0.491 SPX
1	1	SPY	=	-6.84 + 0.491 SPX

Regression Analysis: SPY versus SPX

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	115.60	115.60	5.36	0.038
SPX	1	115.60	115.60	5.36	0.038
Error	13	280.13	21.55		
Lack-of-Fit	11	255.13	23.19	1.86	0.402
Pure Error	2	25.00	12.50		
Total	14	395.73			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
4.64204	29.21%	23.77%	4.70%

Coefficients

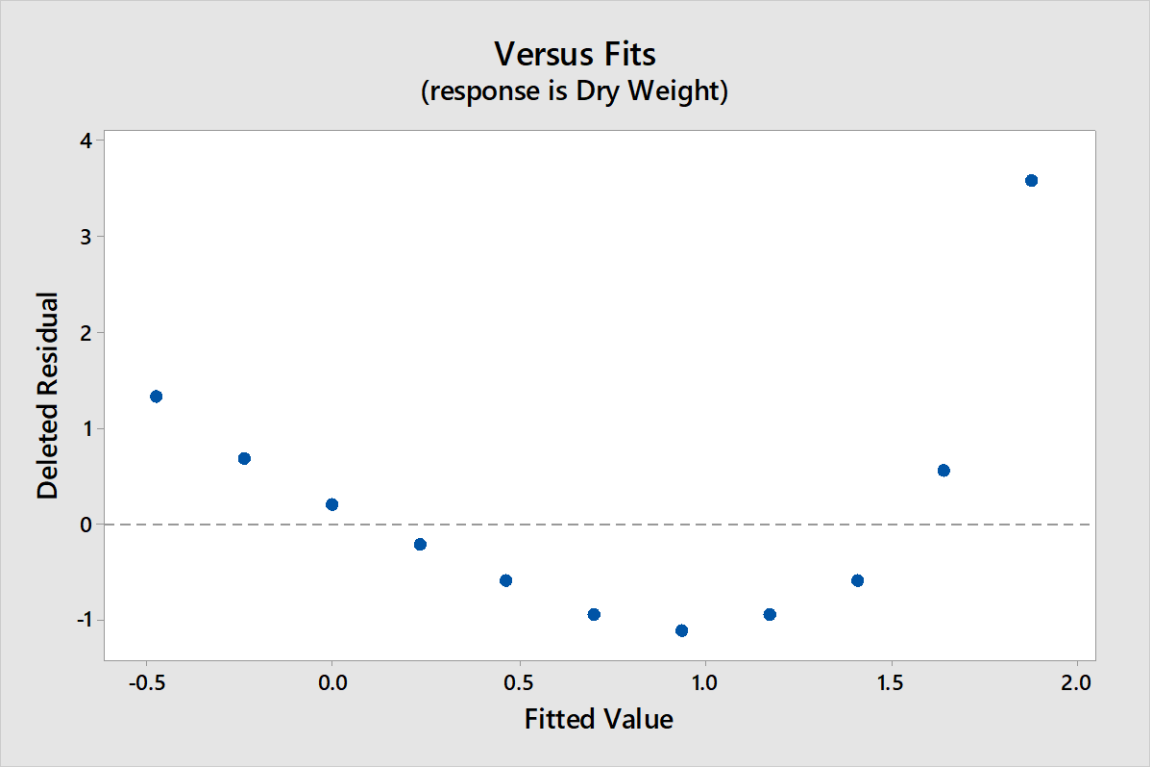
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	0.43	6.18	0.07	0.945	
SPX	0.417	0.180	2.32	0.038	1.00

Regression Equation

SPY = 0.43 + 0.417 SPX

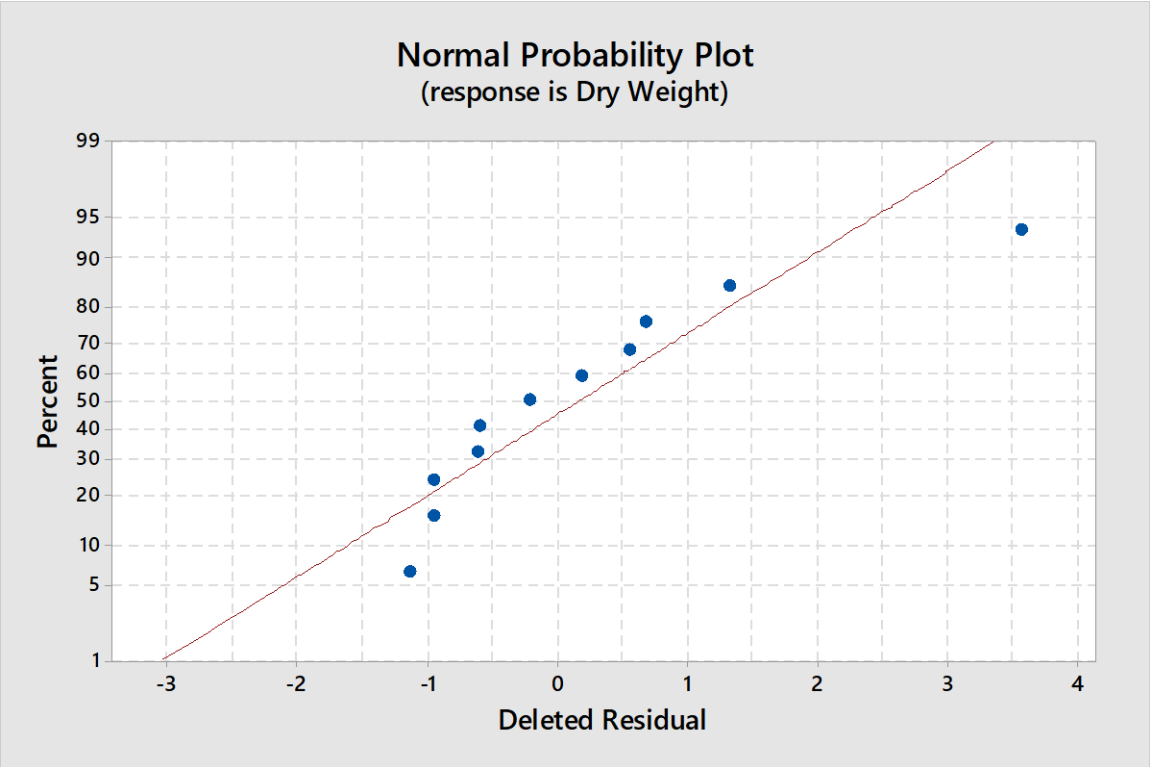
Chapter 14

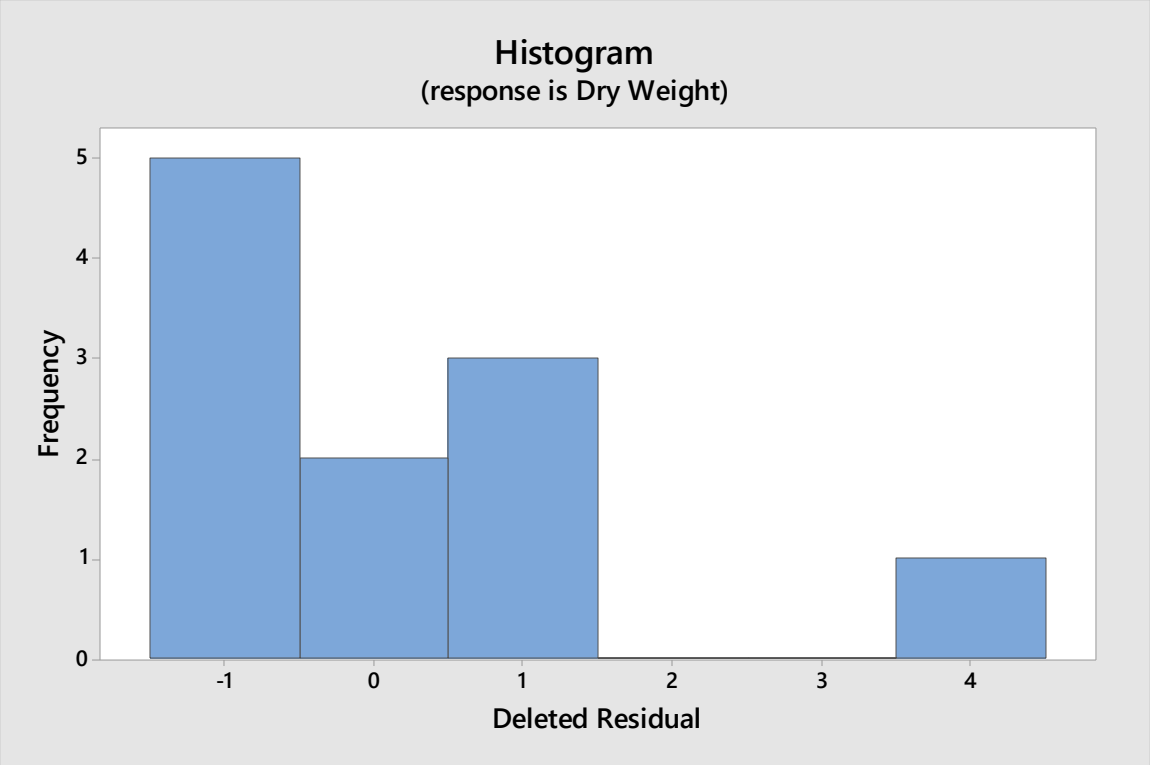
1a)



1b)

Variable	Mean	StDev	Minimum	Median	Maximum	IQR
SRES4	0.0488	1.090	-1.119	-0.236	2.351	1.649

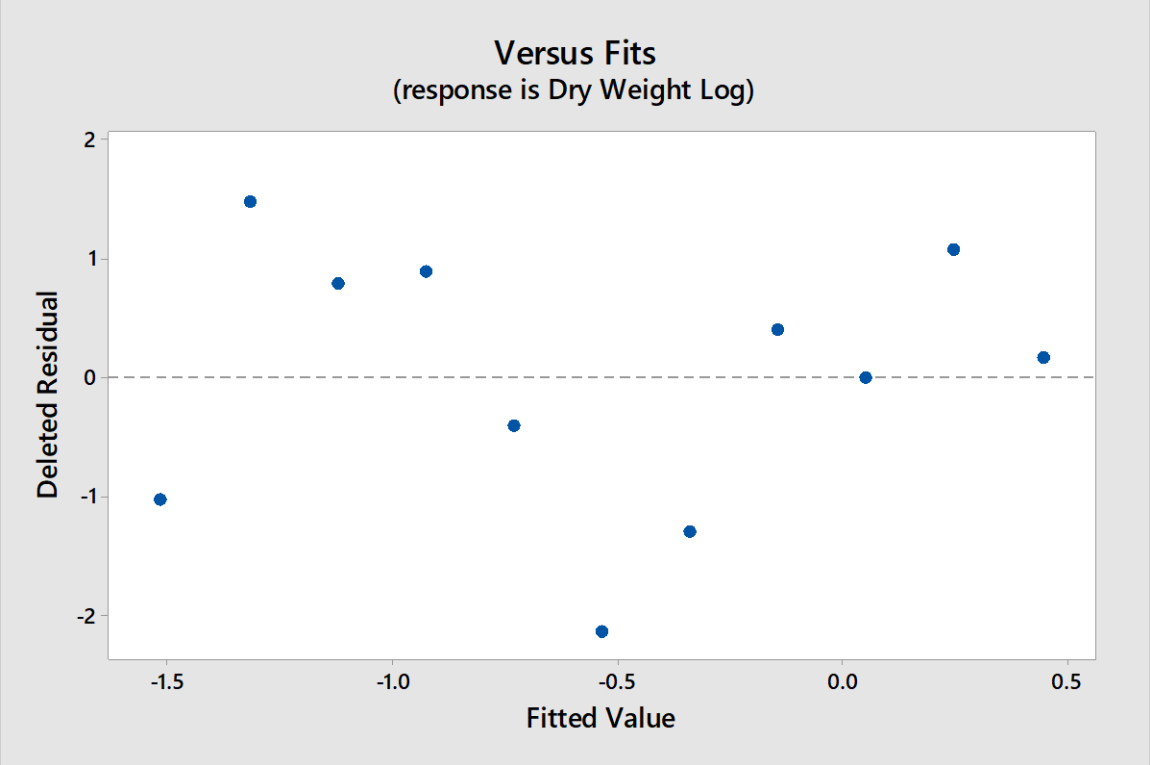




1c)

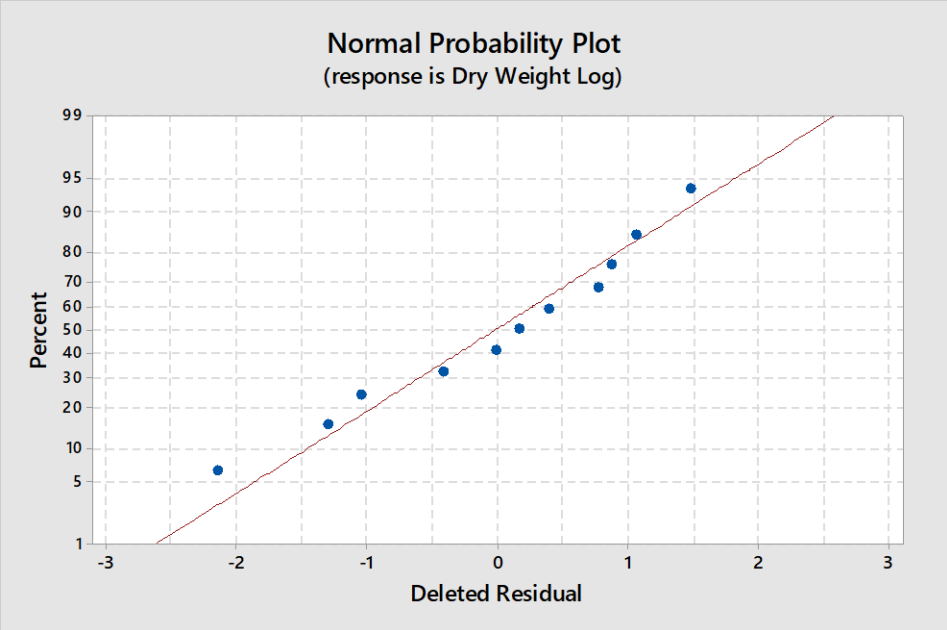
TRES	HI	COOK
1.31461	0.318182	0.37306
0.66963	0.236364	0.07393
0.17879	0.172727	0.00374
-0.22297	0.127273	0.00405
-0.60137	0.100000	0.02163
-0.95346	0.090909	0.04592
-1.13662	0.100000	0.06952
-0.95849	0.127273	0.06760
-0.60840	0.172727	0.04155
0.54838	0.236364	0.05046
3.56791	0.318182	1.28958

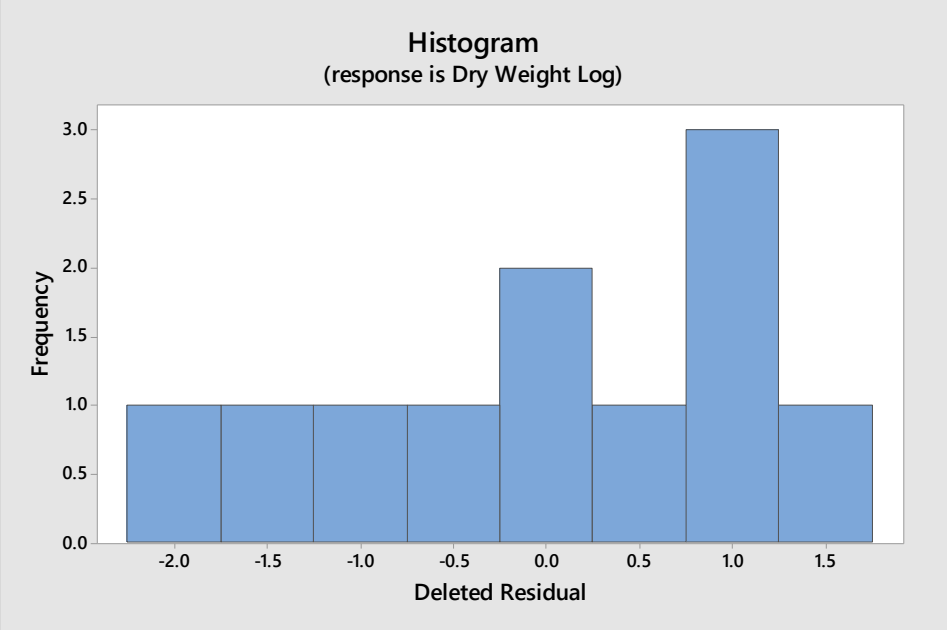
2a)

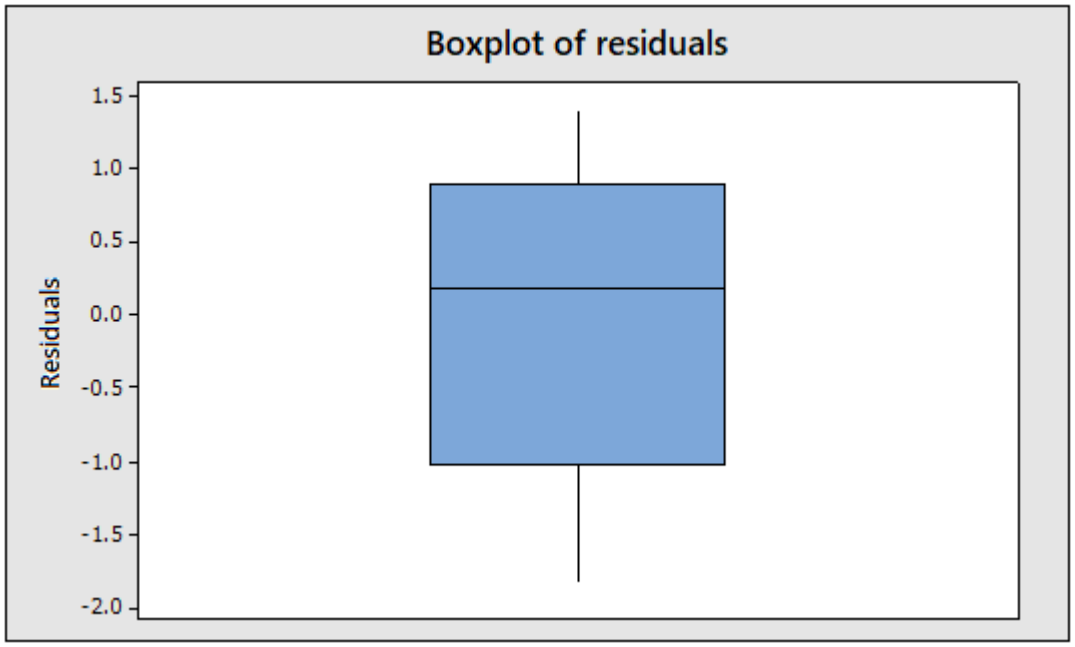

Versus Fits
(response is Dry Weight Log)
Deleted Residual
2
1
0
-1
-2
-1.5
-1.0
-0.5
0.0
0.5
Fitted Value

2b)

Variable	Mean	StDev	Minimum	Median	Maximum	IQR
SRES4	0.0130	1.037	-1.830	0.178	1.391	1.911







2c)

SRES_2	TRES_3	HI_3	COOK_3
-1.03923	-1.04447	0.318182	0.252001
1.38663	1.47426	0.236364	0.297568
0.78823	0.77021	0.172727	0.064862
0.88598	0.87430	0.127273	0.057236
-0.43759	-0.41702	0.100000	0.010638
-1.81359	-2.14650	0.090909	0.164455
-1.25543	-1.30323	0.100000	0.087561
0.40694	0.38725	0.127273	0.012075
-0.00854	-0.00806	0.172727	0.000008
1.05535	1.06294	0.236364	0.172369
0.17255	0.16295	0.318182	0.006947