James Hahn
STAT1221
Homework #2
MINITAB Output

1c)

Regression Analysis: Dry Weight versus Age

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	6.079	6.0785	26.18	0.001
Age	1	6.079	6.0785	26.18	0.001
Error	9	2.090	0.2322		
Total	10	8.168			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.481848	74.42%	71.58%	54.56%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-1.885	0.526	-3.58	0.006	
Age	0.2351	0.0459	5.12	0.001	1.00

Regression Equation

Dry Weight = -1.885 + 0.2351 Age

Fits and Diagnostics for Unusual Observations

Obs	Dry Weight	Fit	Resid	Std Resid	
11	2.812	1.877	0.935	2.35	R

R Large residual

Regression Analysis: Dry Weight Log versus Age

The regression equation is

Dry Weight Log = - 2.689 + 0.1959 Age

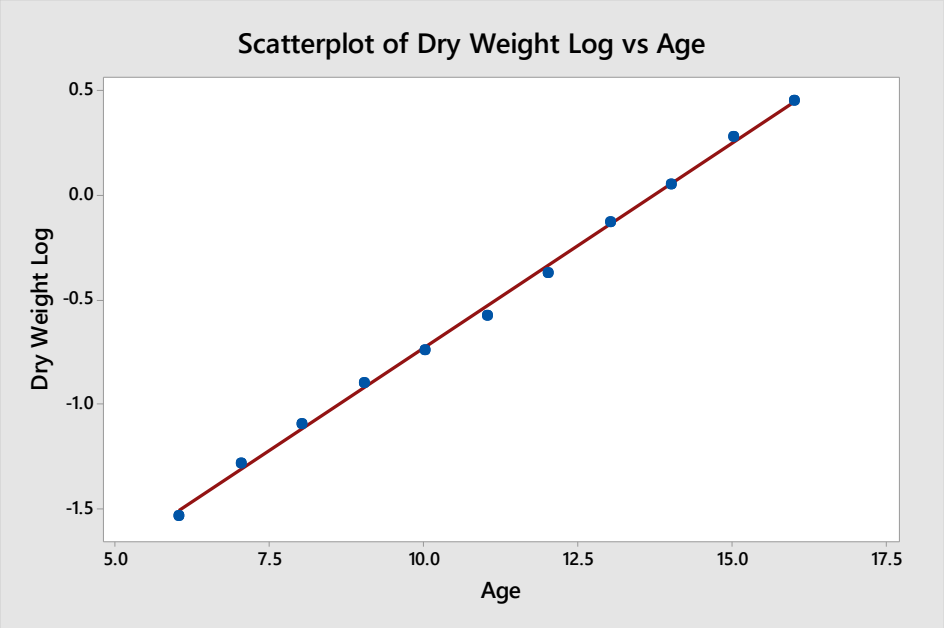
Model Summary

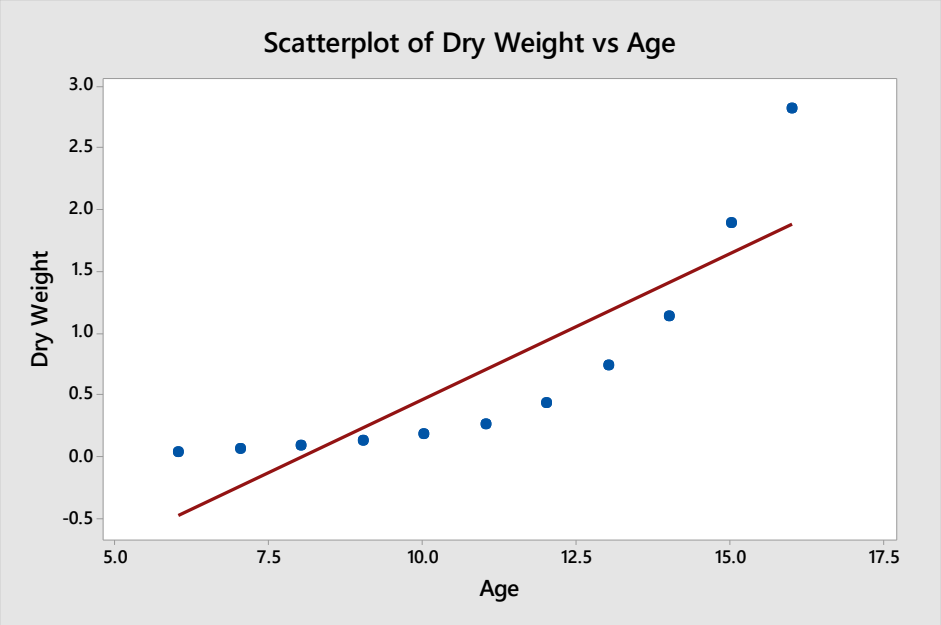
S	R-sq	R-sq(adj)
0.0280741	99.83%	99.81%

Analysis of Variance

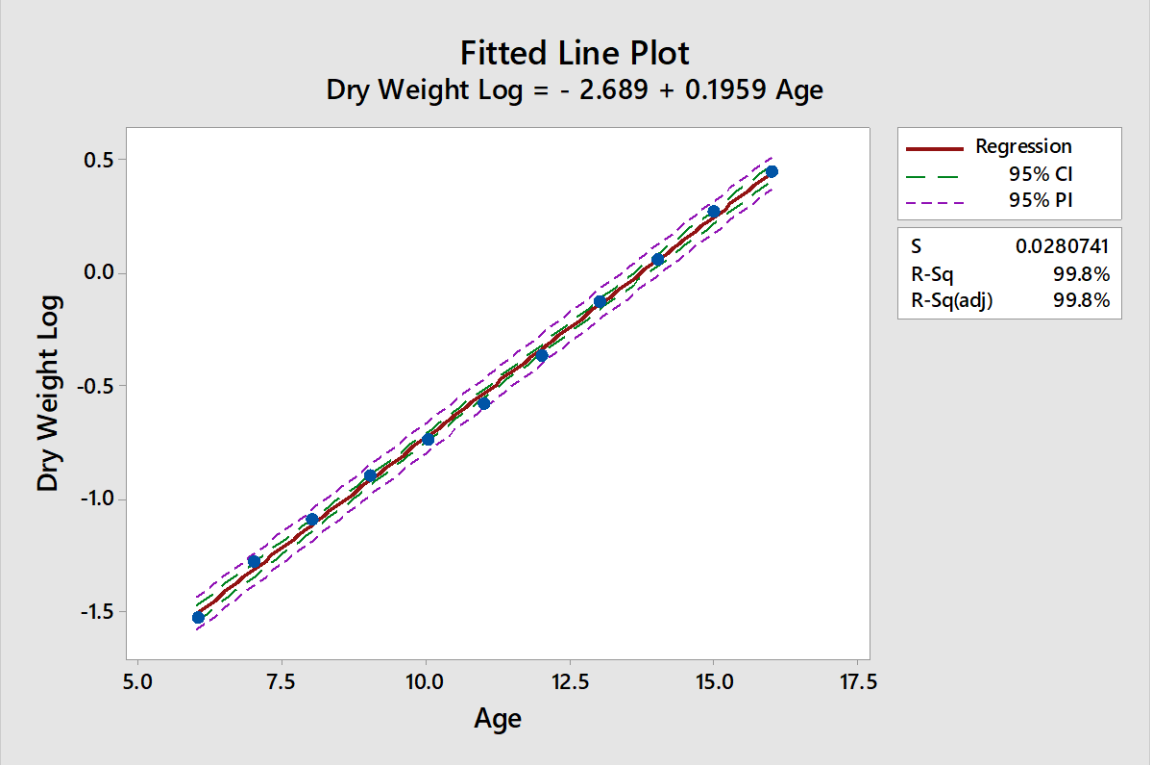
Source	DF	SS	MS	F	P
Regression	1	4.22106	4.22106	5355.60	0.000
Error	9	0.00709	0.00079		
Total	10	4.22815			

1d)




Scatterplot of Dry Weight vs Age
Dry Weight
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
5.0
7.5
10.0
12.5
15.0
17.5
Age

1f)


Fitted Line Plot
Dry Weight Log = - 2.689 + 0.1959 Age
Dry Weight Log
0.5
0.0
-0.5
-1.0
-1.5
5.0
7.5
10.0
12.5
15.0
17.5
Age
Regression
95% CI
95% PI
S 0.0280741
R-Sq 99.8%
R-Sq(adj) 99.8%

2b 1)

Regression Analysis: SBP versus QUET

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	3538	3537.95	36.75	0.000
QUET	1	3538	3537.95	36.75	0.000
Error	30	2888	96.27		
Total	31	6426			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
9.81160	55.06%	53.56%	45.90%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	70.6	12.3	5.73	0.000	
QUET	21.49	3.55	6.06	0.000	1.00

Regression Equation

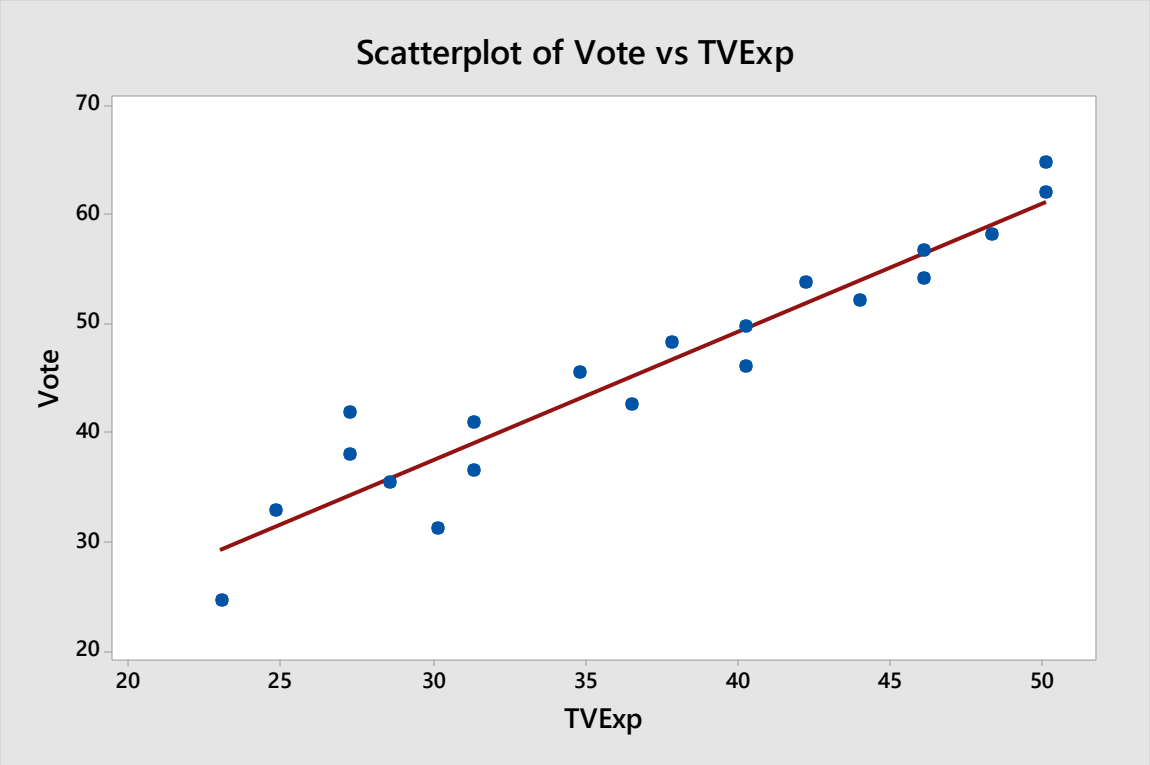
SBP = 70.6 + 21.49 QUET

Fits and Diagnostics for Unusual Observations

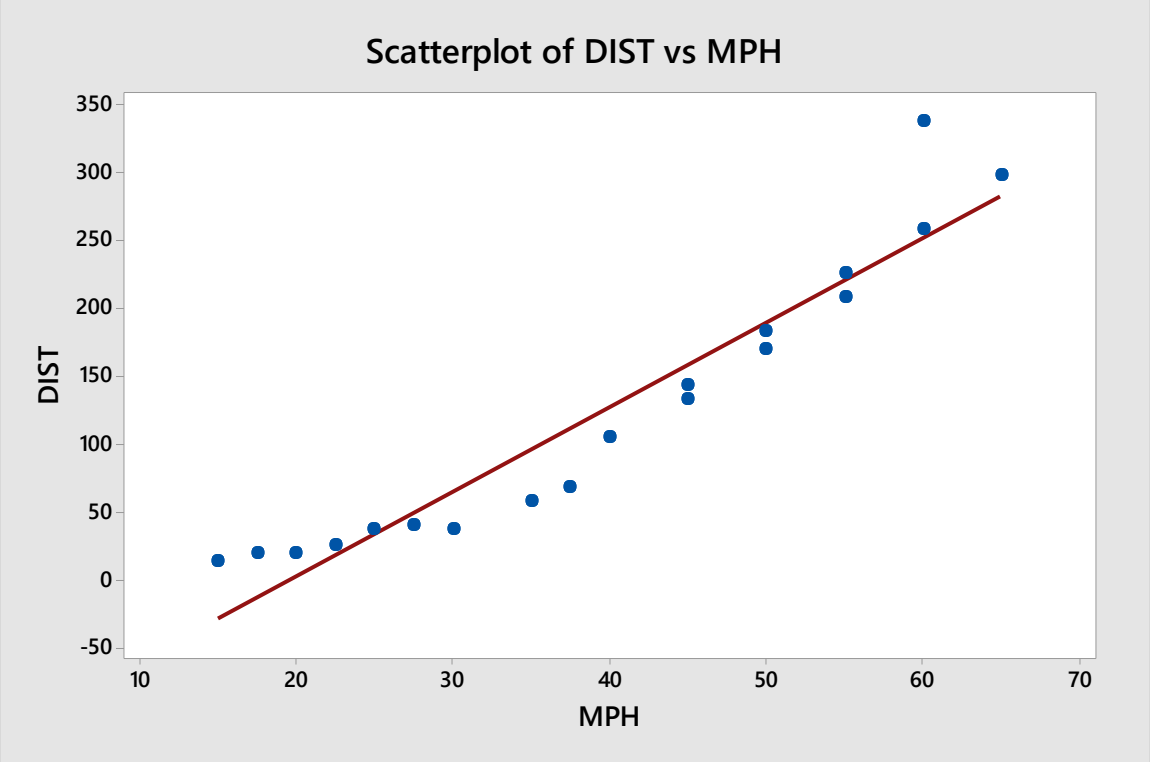
Obs	SBP	Fit	Resid	Std Resid		
9	144.00	121.47	22.53	2.54	R	
10	180.00	170.23	9.77	1.13		X
12	138.00	157.23	-19.23	-2.04	R	

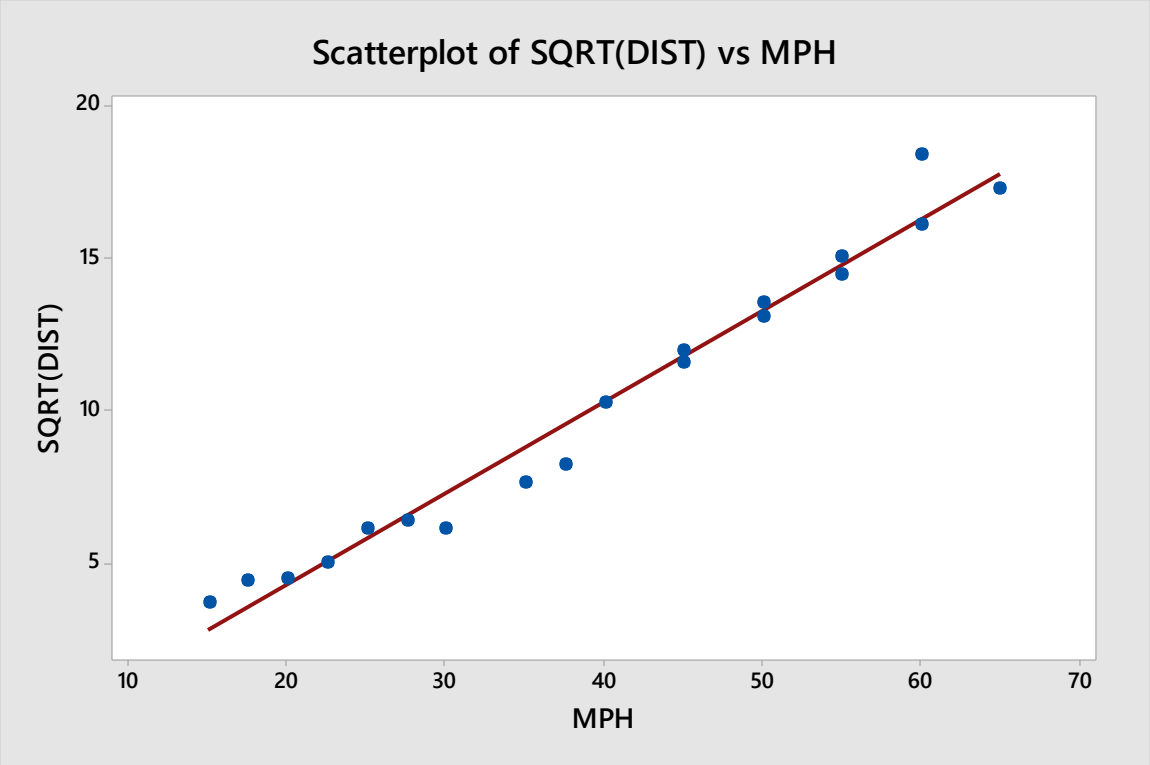
R Large residual
X Unusual X

5a)


Scatterplot of Vote vs TVExp
Vote
TVExp
70
60
50
40
30
20
20
25
30
35
40
45
50

7a)


Scatterplot of DIST vs MPH
DIST
MPH
350
300
250
200
150
100
50
0
-50
10
20
30
40
50
60
70



Regression Analysis: DIST versus MPH

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	173474	173474	173.18	0.000
MPH	1	173474	173474	173.18	0.000
Error	17	17029	1002		
Lack-of-Fit	13	13595	1046	1.22	0.465
Pure Error	4	3434	858		
Total	18	190503			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
31.6495	91.06%	90.54%	88.33%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-122.3	20.2	-6.07	0.000	
MPH	6.227	0.473	13.16	0.000	1.00

Regression Equation

DIST = -122.3 + 6.227 MPH

Fits and Diagnostics for Unusual Observations

Obs	DIST	Fit	Resid	Std Resid	
3	337.6	251.3	86.3	2.95	R

R Large residual

Regression Analysis: SQRT(DIST) versus MPH

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	399.351	399.351	607.22	0.000
MPH	1	399.351	399.351	607.22	0.000
Error	17	11.180	0.658		
Lack-of-Fit	13	8.169	0.628	0.83	0.642
Pure Error	4	3.012	0.753		
Total	18	410.531			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.810967	97.28%	97.12%	96.49%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-1.697	0.516	-3.29	0.004	
MPH	0.2988	0.0121	24.64	0.000	1.00

Regression Equation

SQRT(DIST) = -1.697 + 0.2988 MPH

Fits and Diagnostics for Unusual Observations

Obs	SQRT(DIST)	Fit	Resid	Std Resid	
3	18.370	16.229	2.141	2.85	R

R Large residual