Obs	A	B	C	D	y	e	f
1	low	low	low	low	26.1	lowlow	lowlow
2	low	low	low	low	27.5	lowlow	lowlow
3	low	low	low	high	23.5	lowlow	lowhigh
4	low	low	low	high	21.1	lowlow	lowhigh
5	low	low	high	low	22.8	lowlow	highlow
6	low	low	high	low	23.8	lowlow	highlow
7	low	low	high	high	30.6	lowlow	highhigh
8	low	low	high	high	32.5	lowlow	highhigh
9	low	high	low	low	22.0	lowhigh	lowlow
10	low	high	low	low	20.2	lowhigh	lowlow
11	low	high	low	high	28.1	lowhigh	lowhigh
12	low	high	low	high	29.9	lowhigh	lowhigh
13	low	high	high	low	30.0	lowhigh	highlow
14	low	high	high	low	29.3	lowhigh	highlow
15	low	high	high	high	38.3	lowhigh	highhigh
16	low	high	high	high	38.5	lowhigh	highhigh
17	high	low	low	low	11.4	highlow	lowlow
18	high	low	low	low	11.0	highlow	lowlow
19	high	low	low	high	20.4	highlow	lowhigh
20	high	low	low	high	22.0	highlow	lowhigh
21	high	low	high	low	22.3	highlow	highlow
22	high	low	high	low	20.2	highlow	highlow
23	high	low	high	high	28.7	highlow	highhigh
24	high	low	high	high	28.8	highlow	highhigh
25	high	high	low	low	18.9	highhigh	lowlow
26	high	high	low	low	16.4	highhigh	lowlow
27	high	high	low	high	26.6	highhigh	lowhigh
28	high	high	low	high	26.5	highhigh	lowhigh
29	high	high	high	low	29.6	highhigh	highlow
30	high	high	high	low	29.8	highhigh	highlow
31	high	high	high	high	34.5	highhigh	highhigh
32	high	high	high	high	34.9	highhigh	highhigh

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
e	4	highhigh highlow lowhigh lowlow
f	4	highhigh highlow lowhigh lowlow

Number of Observations Read	32
Number of Observations Used	32

The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	1367.198750	91.146583	88.55	<.0001
Error	16	16.470000	1.029375		
Corrected Total	31	1383.668750			

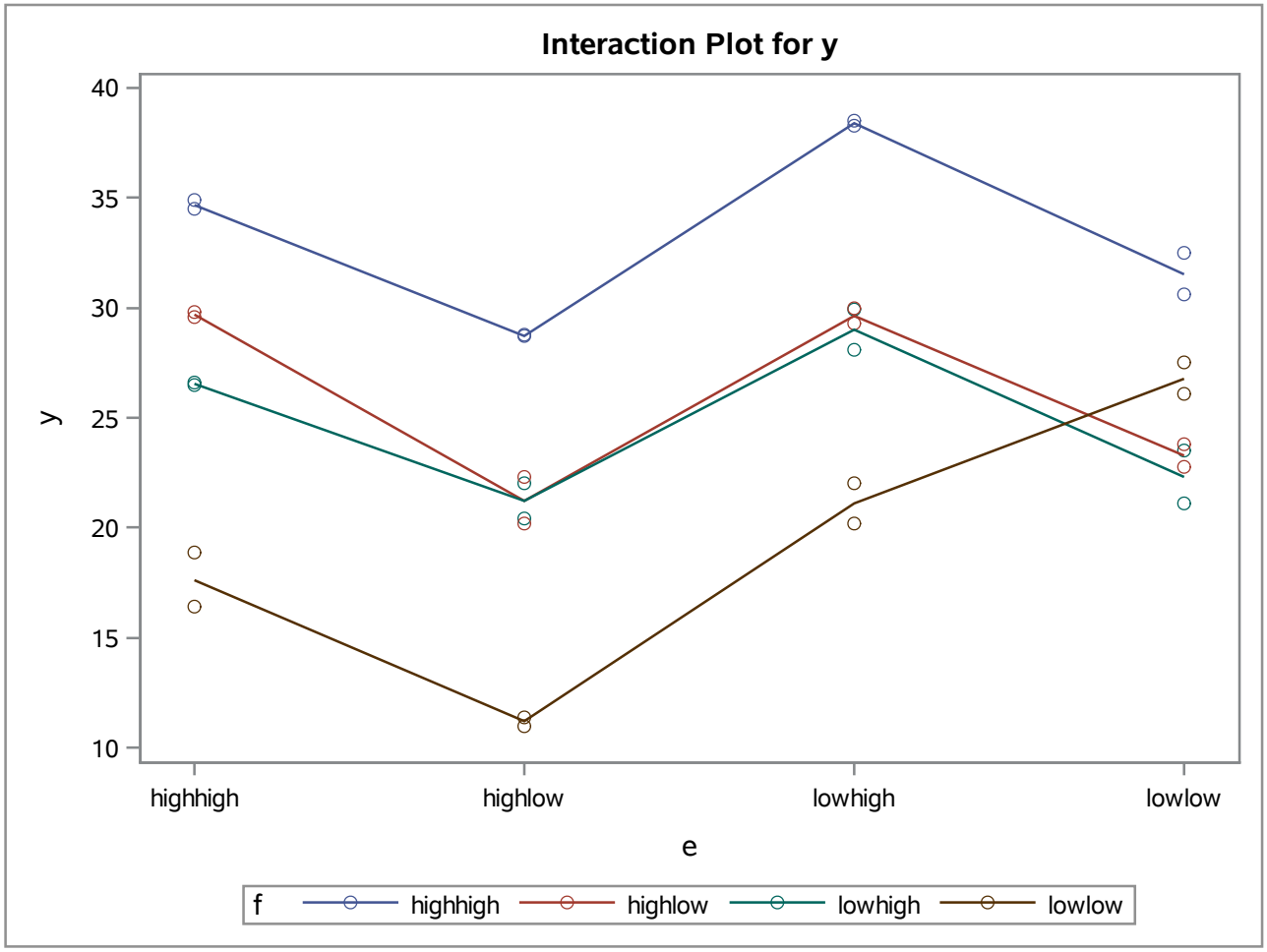
R-Square	Coeff Var	Root MSE	y Mean
0.988097	3.929629	1.014581	25.81875

Source	DF	Type I SS	Mean Square	F Value	Pr > F
e	3	342.9212500	114.3070833	111.05	<.0001
f	3	814.6662500	271.5554167	263.81	<.0001
e*f	9	209.6112500	23.2901389	22.63	<.0001

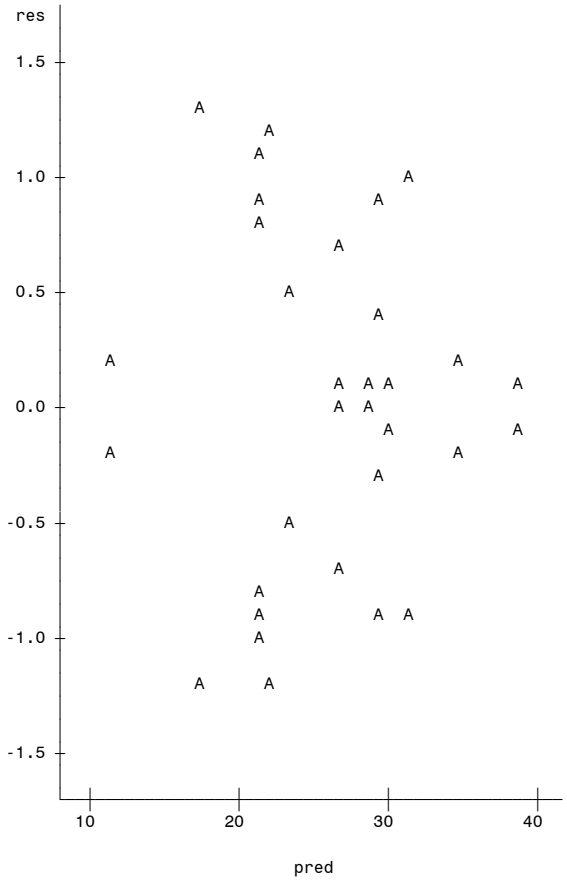
Source	DF	Type III SS	Mean Square	F Value	Pr > F
e	3	342.9212500	114.3070833	111.05	<.0001
f	3	814.6662500	271.5554167	263.81	<.0001
e*f	9	209.6112500	23.2901389	22.63	<.0001

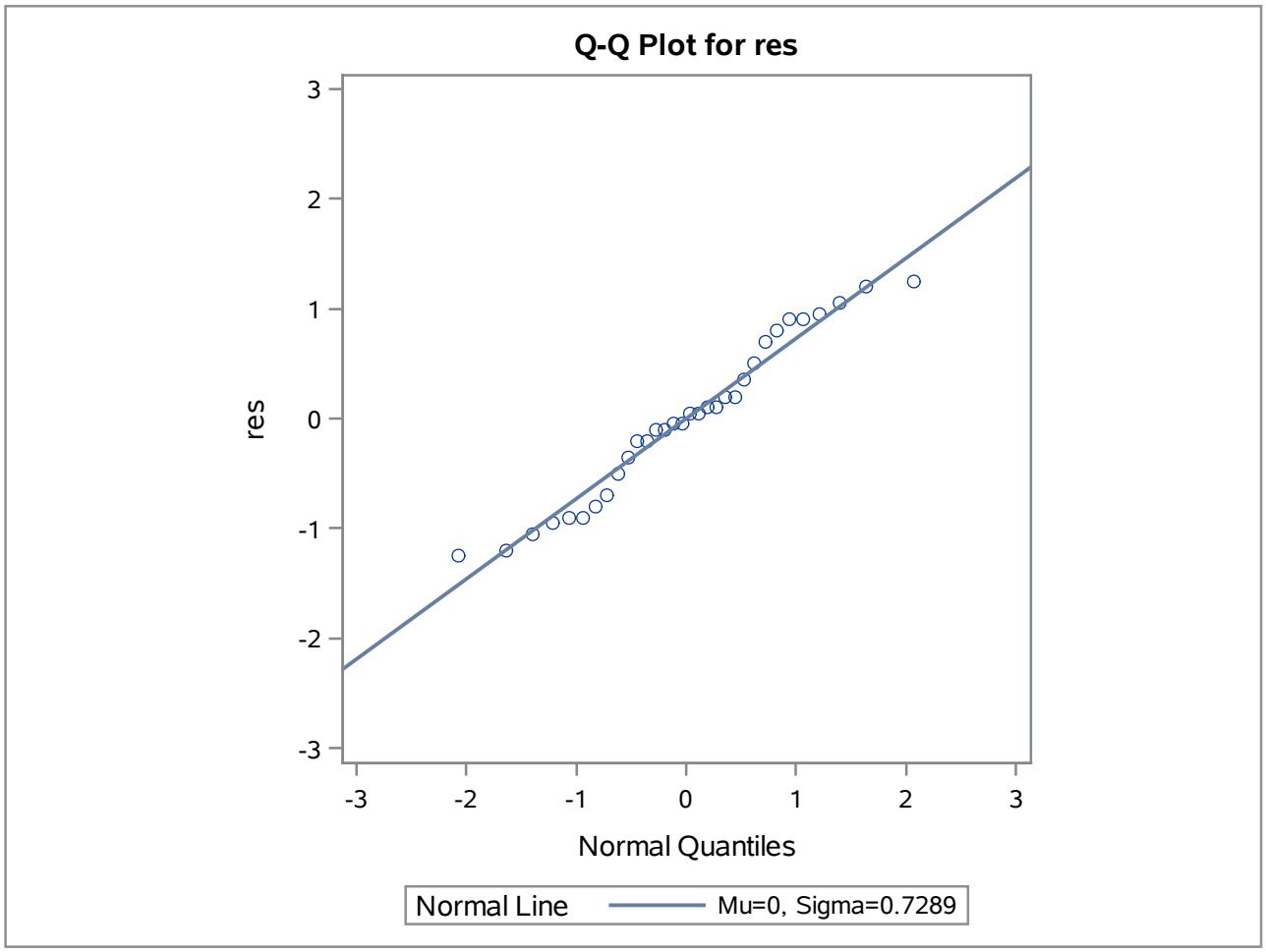
The GLM Procedure

Dependent Variable: y



Plot of res*pred. Legend: A = 1 obs, B = 2 obs, etc.

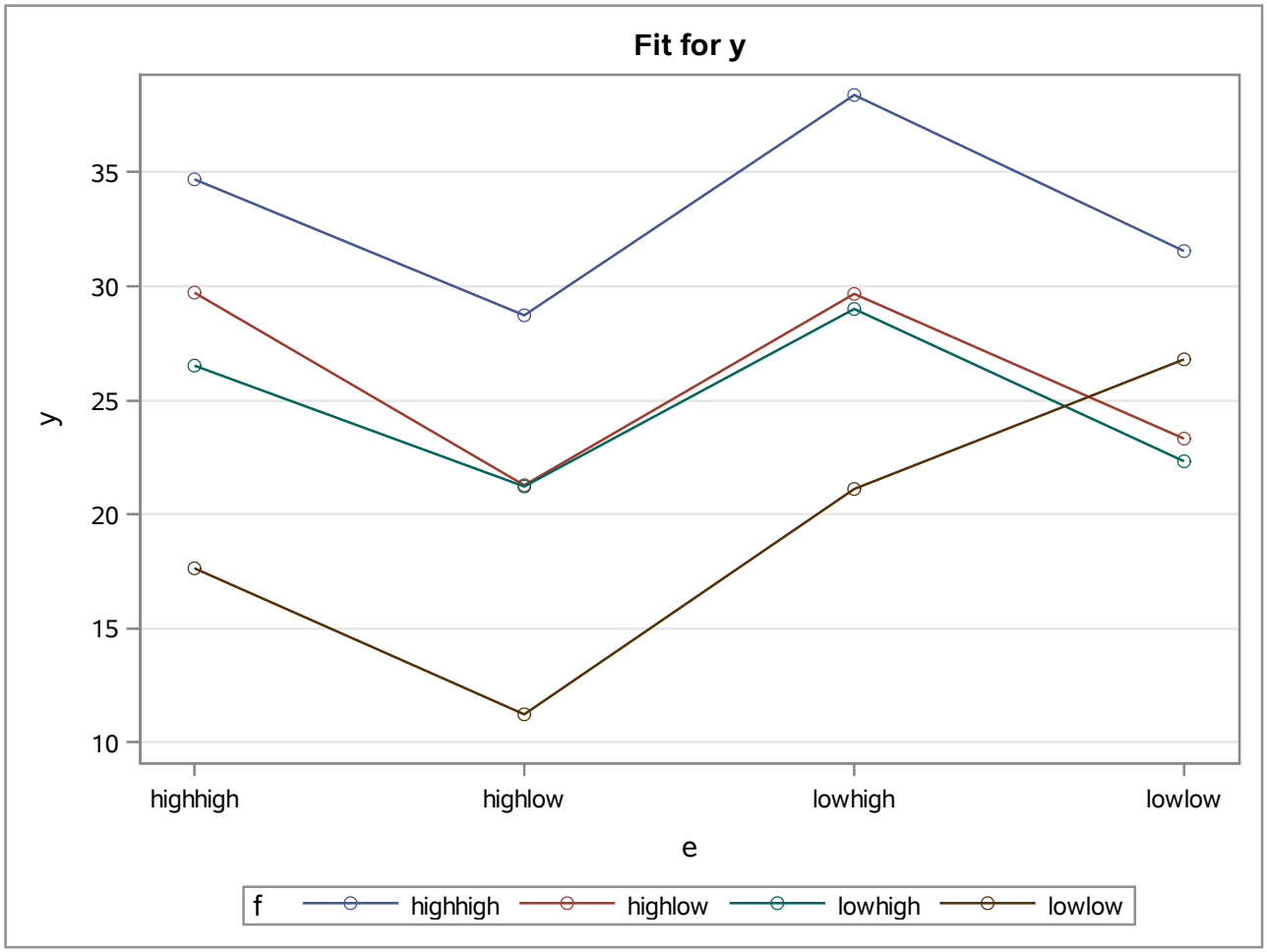



Q-Q Plot for res
res
Normal Quantiles
3
2
1
0
-1
-2
-3
Normal Line
Mu=0, Sigma=0.7289

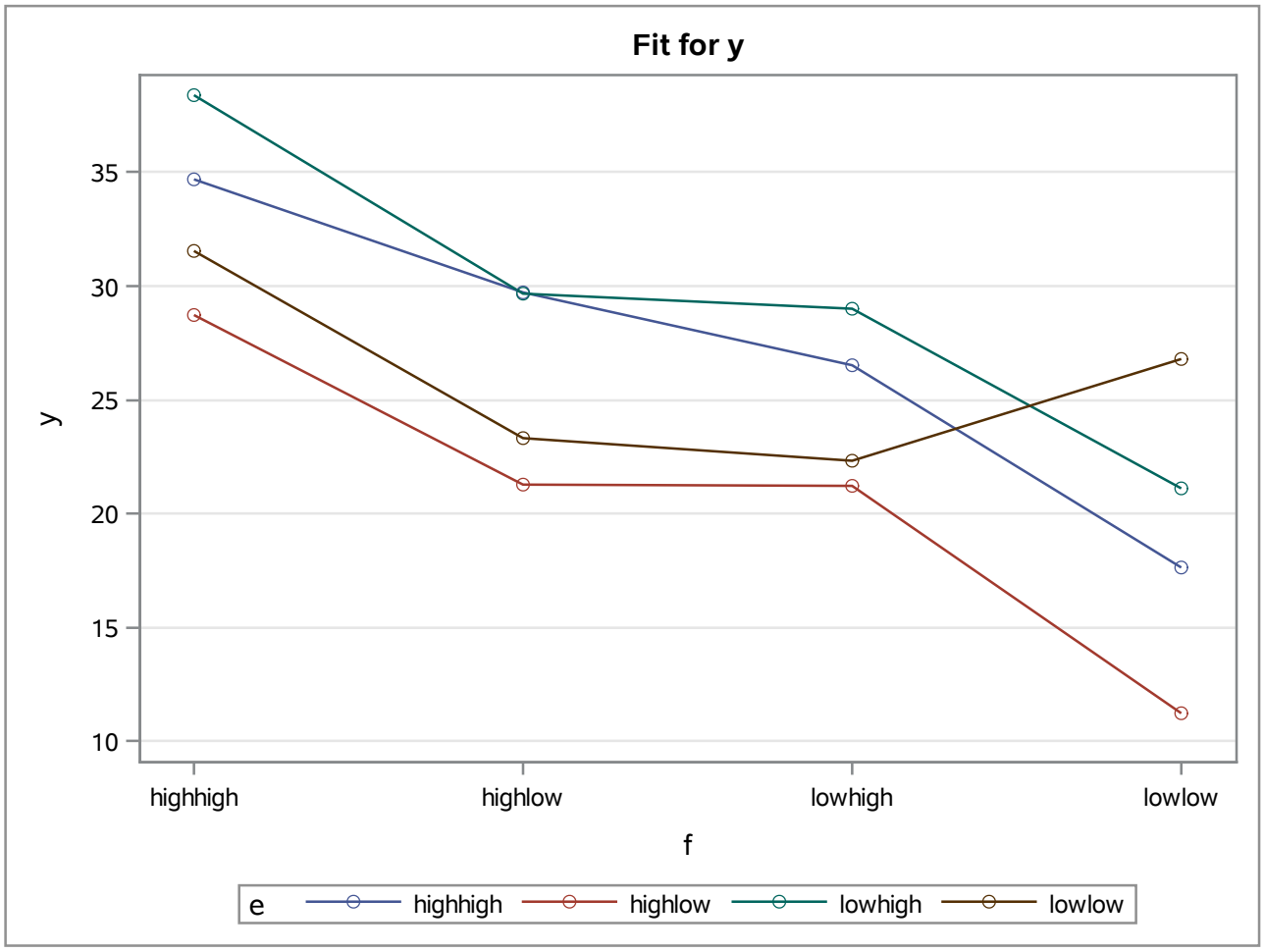
The PLM Procedure

Store Information	
Item Store	WORK.OEX9_2OUT
Data Set Created From	WORK.OEX9_2
Created By	PROC GLM
Date Created	17SEP19:13:48:54
Response Variable	y
Class Variables	e f
Model Effects	Intercept e f e*f

Class Level Information		
Class	**Levels**	**Values**
e	4	highhigh highlow lowhigh lowlow
f	4	highhigh highlow lowhigh lowlow



The PLM Procedure



The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
e	3	highhigh highlow lowhigh
f	4	highhigh highlow lowhigh lowlow

Number of Observations Read	24
Number of Observations Used	24

The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	1262.051250	114.731932	133.60	<.0001
Error	12	10.305000	0.858750		
Corrected Total	23	1272.356250			

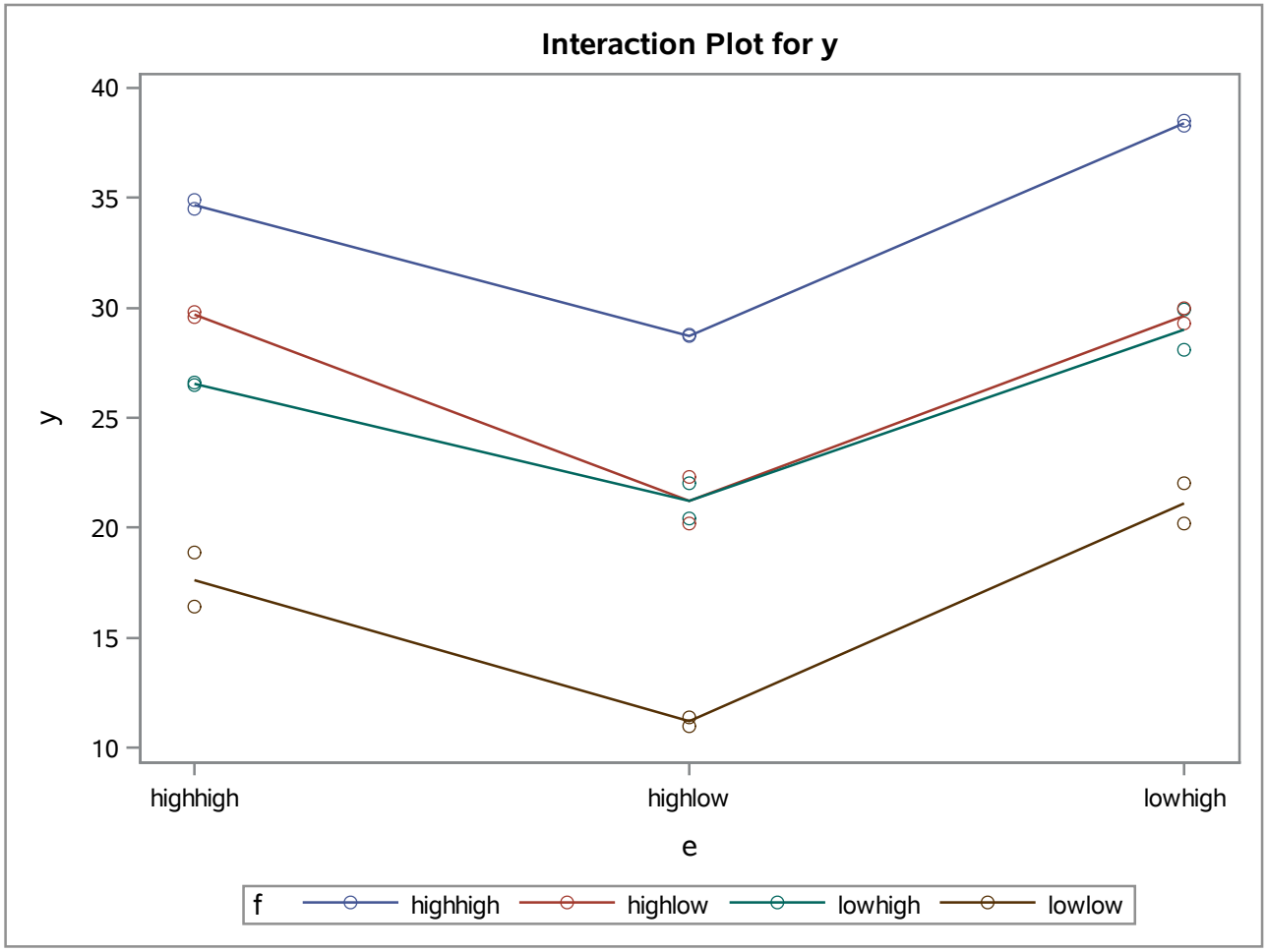
R-Square	Coeff Var	Root MSE	y Mean
0.991901	3.597041	0.926688	25.76250

Source	DF	Type I SS	Mean Square	F Value	Pr > F
e	2	342.6175000	171.3087500	199.49	<.0001
f	3	907.9445833	302.6481944	352.43	<.0001
e*f	6	11.4891667	1.9148611	2.23	0.1117

Source	DF	Type III SS	Mean Square	F Value	Pr > F
e	2	342.6175000	171.3087500	199.49	<.0001
f	3	907.9445833	302.6481944	352.43	<.0001
e*f	6	11.4891667	1.9148611	2.23	0.1117

The GLM Procedure

Dependent Variable: y



The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
e	4	highhigh highlow lowhigh lowlow
f	4	highhigh highlow lowhigh lowlow

Number of Observations Read	32
Number of Observations Used	32

The GLM Procedure

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	1367.198750	91.146583	88.55	<.0001
Error	16	16.470000	1.029375		
Corrected Total	31	1383.668750			

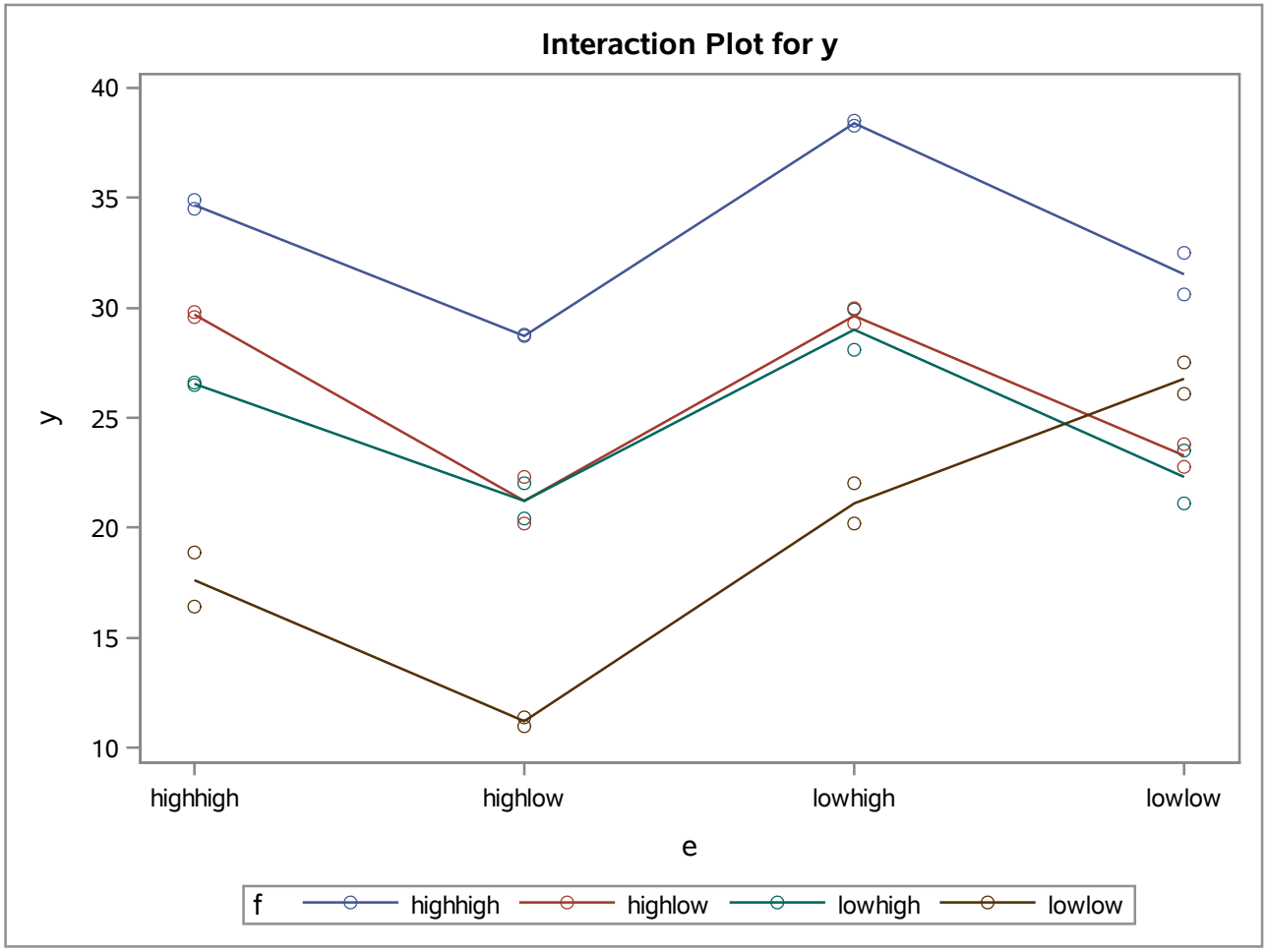
R-Square	Coeff Var	Root MSE	y Mean
0.988097	3.929629	1.014581	25.81875

Source	DF	Type I SS	Mean Square	F Value	Pr > F
e	3	342.9212500	114.3070833	111.05	<.0001
f	3	814.6662500	271.5554167	263.81	<.0001
e*f	9	209.6112500	23.2901389	22.63	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
e	3	342.9212500	114.3070833	111.05	<.0001
f	3	814.6662500	271.5554167	263.81	<.0001
e*f	9	209.6112500	23.2901389	22.63	<.0001

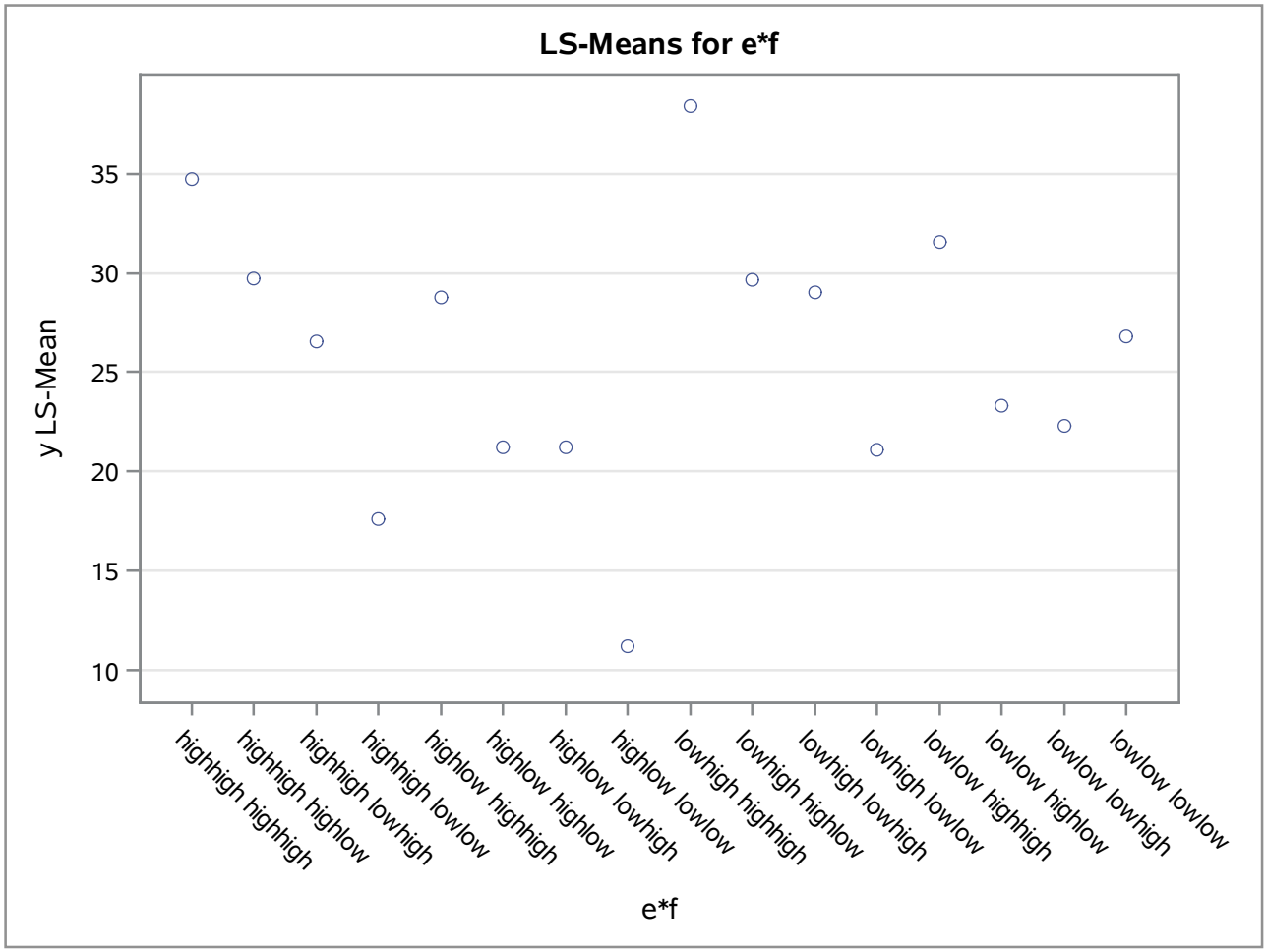
The GLM Procedure

Dependent Variable: y

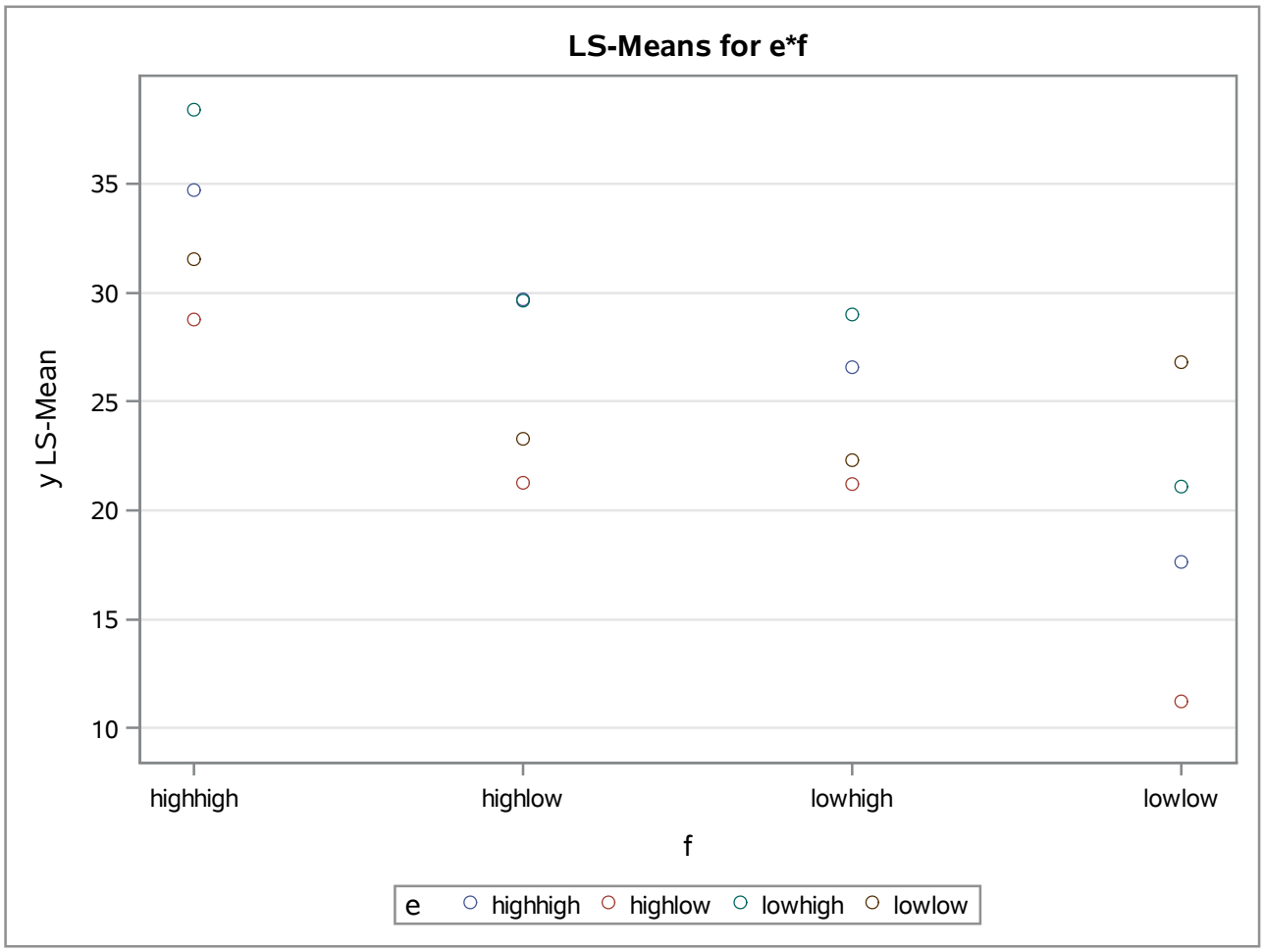


The GLM Procedure
Least Squares Means

e	f	y LSMEAN
highhigh	highhigh	34.7000000
highhigh	highlow	29.7000000
highhigh	lowhigh	26.5500000
highhigh	lowlow	17.6500000
highlow	highhigh	28.7500000
highlow	highlow	21.2500000
highlow	lowhigh	21.2000000
highlow	lowlow	11.2000000
lowhigh	highhigh	38.4000000
lowhigh	highlow	29.6500000
lowhigh	lowhigh	29.0000000
lowhigh	lowlow	21.1000000
lowlow	highhigh	31.5500000
lowlow	highlow	23.3000000
lowlow	lowhigh	22.3000000
lowlow	lowlow	26.8000000



The GLM Procedure
Least Squares Means

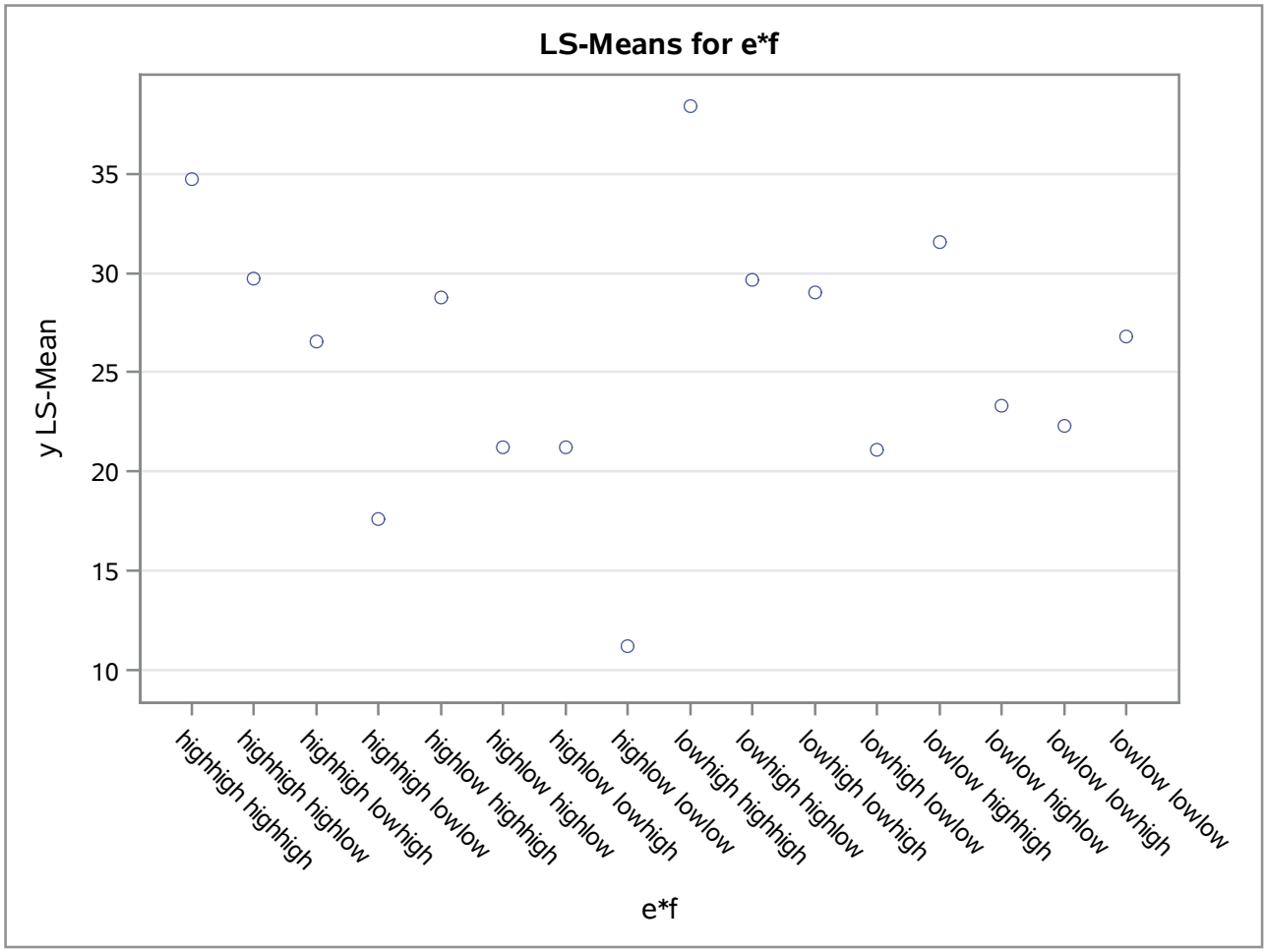


The GLM Procedure
Least Squares Means

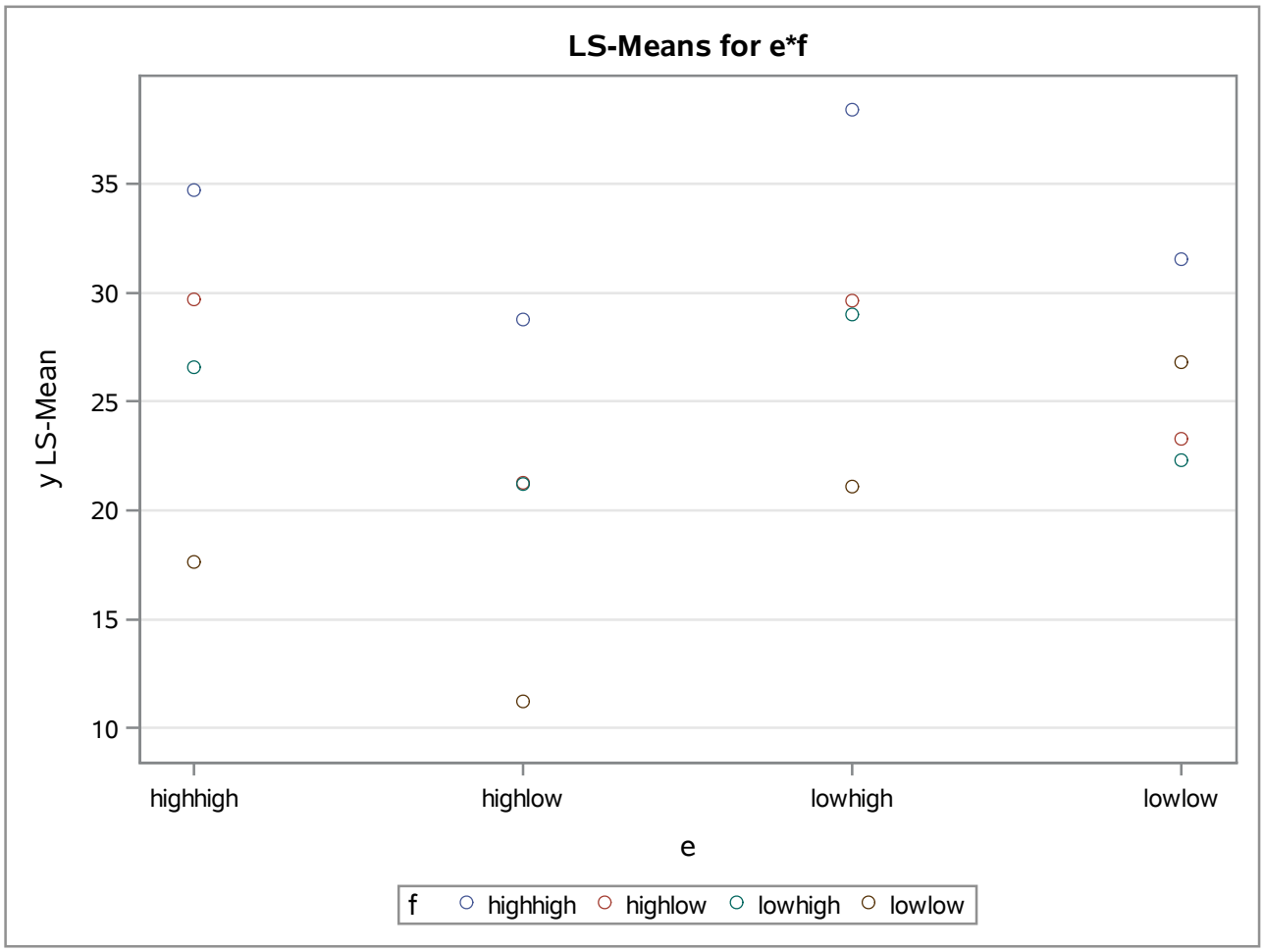
e*f Effect Sliced by e for y					
e	DF	Sum of Squares	Mean Square	F Value	Pr > F
highhigh	3	308.230000	102.743333	99.81	<.0001
highlow	3	311.130000	103.710000	100.75	<.0001
lowhigh	3	300.073750	100.024583	97.17	<.0001
lowlow	3	104.843750	34.947917	33.95	<.0001

The GLM Procedure
Least Squares Means

e	f	y LSMEAN
highhigh	highhigh	34.7000000
highhigh	highlow	29.7000000
highhigh	lowhigh	26.5500000
highhigh	lowlow	17.6500000
highlow	highhigh	28.7500000
highlow	highlow	21.2500000
highlow	lowhigh	21.2000000
highlow	lowlow	11.2000000
lowhigh	highhigh	38.4000000
lowhigh	highlow	29.6500000
lowhigh	lowhigh	29.0000000
lowhigh	lowlow	21.1000000
lowlow	highhigh	31.5500000
lowlow	highlow	23.3000000
lowlow	lowhigh	22.3000000
lowlow	lowlow	26.8000000



The GLM Procedure
Least Squares Means



The GLM Procedure
Least Squares Means

e*f Effect Sliced by f for y					
f	DF	Sum of Squares	Mean Square	F Value	Pr > F
highhigh	3	103.450000	34.483333	33.50	<.0001
highlow	3	113.725000	37.908333	36.83	<.0001
lowhigh	3	79.813750	26.604583	25.85	<.0001
lowlow	3	255.543750	85.181250	82.75	<.0001