Figure 1: Problem 1(e)

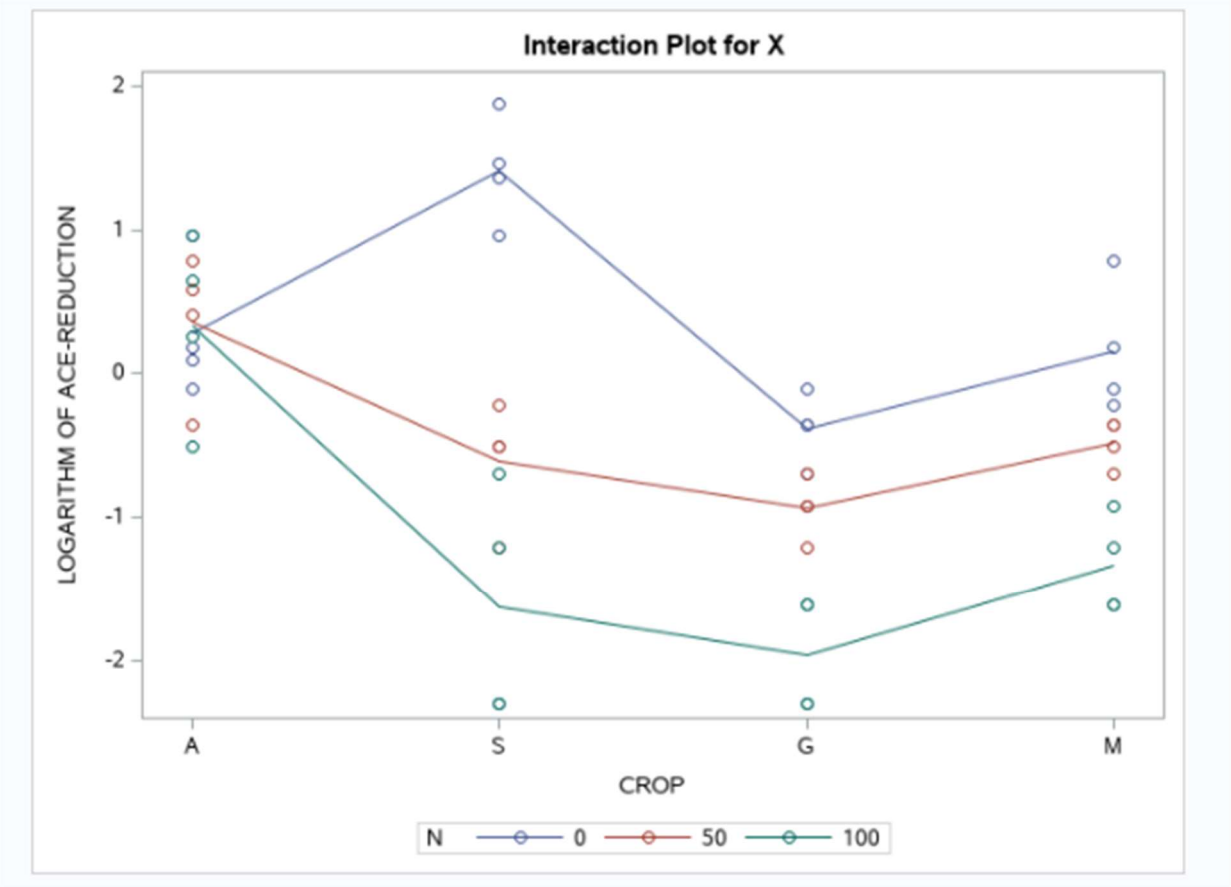

Figure 2: Problem 1(f) Least Squares Means for Effect C*N

Least Squares Means for effect C*N
Pr > |t| for H0: LSMean(i)=LSMean(j)

Dependent Variable: X

i/j	1	2	3	4	5	6	7	8	9	10	11	12
1		0.8171	0.8634	0.0011	0.0081	<.0001	0.0458	0.0005	<.0001	0.7059	0.0224	<.0001
2	0.8171		0.9528	0.0021	0.0044	<.0001	0.0273	0.0003	<.0001	0.5435	0.0128	<.0001
3	0.8634	0.9528		0.0018	0.0052	<.0001	0.0312	0.0003	<.0001	0.5832	0.0148	<.0001
4	0.0011	0.0021	0.0018		<.0001	<.0001	<.0001	<.0001	<.0001	0.0004	<.0001	<.0001
5	0.0081	0.0044	0.0052	<.0001		0.0031	0.4676	0.3222	0.0002	0.0206	0.6796	0.0296
6	<.0001	<.0001	<.0001	<.0001	0.0031		0.0004	0.0365	0.3073	<.0001	0.0010	0.3681
7	0.0458	0.0273	0.0312	<.0001	0.4676	0.0004		0.0908	<.0001	0.1001	0.7525	0.0049
8	0.0005	0.0003	0.0003	<.0001	0.3222	0.0365	0.0908		0.0028	0.0015	0.1642	0.2154
9	<.0001	<.0001	<.0001	<.0001	0.0002	0.3073	<.0001	0.0028		<.0001	<.0001	0.0594
10	0.7059	0.5435	0.5832	0.0004	0.0206	<.0001	0.1001	0.0015	<.0001		0.0525	<.0001
11	0.0224	0.0128	0.0148	<.0001	0.6796	0.0010	0.7525	0.1642	<.0001	0.0525		0.0110
12	<.0001	<.0001	<.0001	<.0001	0.0296	0.3681	0.0049	0.2154	0.0594	<.0001	0.0110	

Figure 3: Problem 2(d) Cell Means and Standard Errors

F*S*P Least Squares Means							
FILLERS	SURFACE TRT	PROPORTION FILLER	Estimate	Standard Error	DF	t Value	Pr > |t|
F1	S1	25	201.00	4.4505	36	45.16	<.0001
F1	S1	50	237.00	4.4505	36	53.25	<.0001
F1	S1	75	268.75	4.4505	36	60.39	<.0001
F1	S2	25	164.00	4.4505	36	36.85	<.0001
F1	S2	50	188.00	4.4505	36	42.24	<.0001
F1	S2	75	227.25	4.4505	36	51.06	<.0001
F2	S1	25	209.50	4.4505	36	47.07	<.0001
F2	S1	50	232.50	4.4505	36	52.24	<.0001
F2	S1	75	240.50	4.4505	36	54.04	<.0001
F2	S2	25	148.50	4.4505	36	33.37	<.0001
F2	S2	50	174.75	4.4505	36	39.26	<.0001
F2	S2	75	200.00	4.4505	36	44.94	<.0001

Figure 4: Problem 2 (d) Marginal Means and Standard Errors

Figure 4 (i): Marginal Means for Surface Treatment (S)

S	W LSMEAN	Standard Error
S1	231.541667	1.816925
S2	183.750000	1.816925

Figure 4 (ii): Marginal Means for Filler (F)

F	W LSMEAN	Standard Error
F1	214.333333	1.816925
F2	200.958333	1.816925

Figure 4: Problem 2 (d) Marginal Means and Standard Errors

Figure 4 (iii): Marginal Means for Proportions of the Filler (P)

P	W LSMEAN	Standard Error
25	180.750000	2.225269
50	208.062500	2.225269
75	234.125000	2.225269

Figure 5(i): Problem 2(e)

F	S	W LSMEAN	Standard Error	Pr > |t|	LSMEAN Number
F1	S1	235.583333	2.569520	<.0001	1
F1	S2	193.083333	2.569520	<.0001	2
F2	S1	227.500000	2.569520	<.0001	3
F2	S2	174.416667	2.569520	<.0001	4

Least Squares Means for effect F*S
Pr > |t| for H0: LSMean(i)=LSMean(j)

Dependent Variable: W

i/j	1	2	3	4
1		<.0001	0.0325	<.0001
2	<.0001		<.0001	<.0001
3	0.0325	<.0001		<.0001
4	<.0001	<.0001	<.0001	

Figure 5(ii): Problem 2(e)

F	P	W LSMEAN	Standard Error	Pr > |t|	LSMEAN Number
F1	25	182.500000	3.147006	<.0001	1
F1	50	212.500000	3.147006	<.0001	2
F1	75	248.000000	3.147006	<.0001	3
F2	25	179.000000	3.147006	<.0001	4
F2	50	203.625000	3.147006	<.0001	5
F2	75	220.250000	3.147006	<.0001	6

Least Squares Means for effect F*P
Pr > |t| for H0: LSMean(i)=LSMean(j)

Dependent Variable: W

i/j	1	2	3	4	5	6
1		<.0001	<.0001	0.4368	<.0001	<.0001
2	<.0001		<.0001	<.0001	0.0538	0.0902
3	<.0001	<.0001		<.0001	<.0001	<.0001
4	0.4368	<.0001	<.0001		<.0001	<.0001
5	<.0001	0.0538	<.0001	<.0001		0.0006
6	<.0001	0.0902	<.0001	<.0001	0.0006	

Figure 6: Problem 2(f)

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey

P	W LSMEAN	Standard Error	Pr > |t|	LSMEAN Number
25	180.750000	2.225269	<.0001	1
50	208.062500	2.225269	<.0001	2
75	234.125000	2.225269	<.0001	3

Least Squares Means for effect P
Pr > |t| for H0: LSMean(i)=LSMean(j)

Dependent Variable: W

i/j	1	2	3
1		<.0001	<.0001
2	<.0001		<.0001
3	<.0001	<.0001	

Figure 7: Problem 2(g)

CELL MEANS MODEL ANALYSIS

The GLM Procedure

Dependent Variable: W WEIGHT LOSS

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
LIN-S1F1	1	9180.12500	9180.12500	115.87	<.0001
LIN-S1F2	1	1922.00000	1922.00000	24.26	<.0001
LIN-S2F1	1	8001.12500	8001.12500	100.99	<.0001
LIN-S2F2	1	5304.50000	5304.50000	66.95	<.0001
QUA-S1F1	1	12.04167	12.04167	0.15	0.6989
QUA-S1F2	1	150.00000	150.00000	1.89	0.1773
QUA-S2F1	1	155.04167	155.04167	1.96	0.1704
QUA-S2F2	1	0.66667	0.66667	0.01	0.9274
LIN-F1	1	17161.00000	17161.00000	216.60	<.0001
LIN-F2	1	6806.25000	6806.25000	85.91	<.0001
QUA-F1	1	40.33333	40.33333	0.51	0.4801
QUA-F2	1	85.33333	85.33333	1.08	0.3063

Figure 8(i): Problem 2 (h)

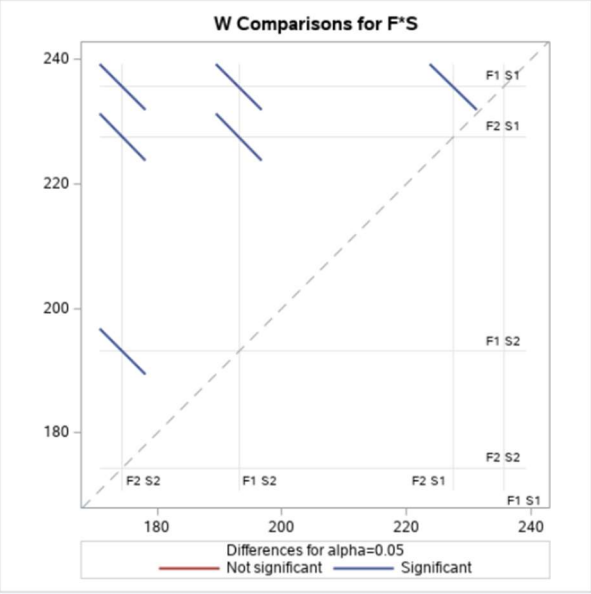

Figure 8 (ii): Problem 2(h)

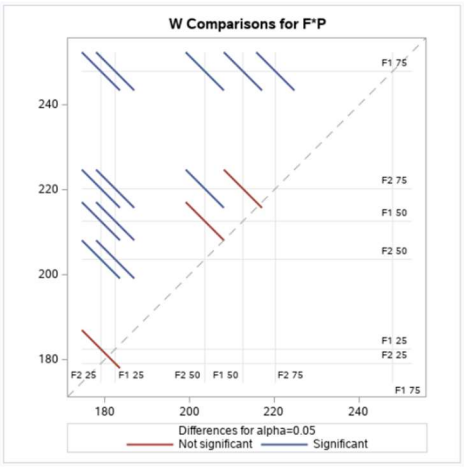

Figure 8 (iii): Problem 2(h)

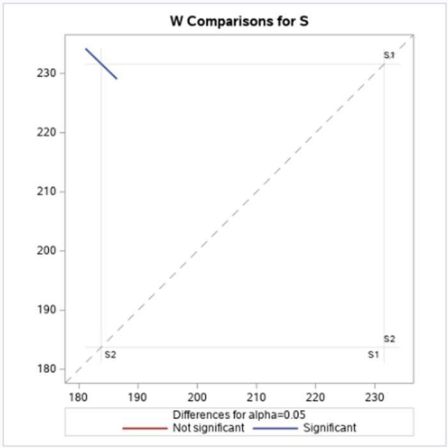

Figure 8 (iv): Problem 2(h)