

```
options nocenter nodate;
run;
```

```
data one;
  input id diet $ wg;
  cards;
4  A 28
3  A 33
1  A 30
9  A 37
11 B 23
7  B 28
8  B 25
10 B 24
2  C 31
12 C 28
6  C 33
5  C 28
;
```

```
proc glm;
  class diet;
  model wg=diet / clparm;
  lsmeans diet / cl;
  estimate 'Diet A Mean' intercept 1 diet 1 0 0;
  estimate 'Diet A Mean - Diet B Mean' diet 1 -1 0;
  estimate 'High Protein vs. Lower Protein' diet .5 -1 .5;
  estimate 'High Protein vs. Lower Protein (2)'
          diet 1 -2 1 / divisor=2;
  estimate 'High Protein vs. High Protein' diet 1 0 -1;
  contrast 'High Protein vs. Lower Protein' diet .5 -1 .5;
  contrast 'High Protein vs. High Protein' diet 1 0 -1;
run;
```

The GLM Procedure

Class Level Information

Class	Levels	Values
di et	3	A B C
Number of observations		12

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	104.0000000	52.0000000	6.00	0.0221
Error	9	78.0000000	8.6666667		
Corrected Total	11	182.0000000			

R-Square	Coeff Var	Root MSE	wg Mean
0.571429	10.15145	2.943920	29.00000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
di et	2	104.0000000	52.0000000	6.00	0.0221

Source	DF	Type III SS	Mean Square	F Value	Pr > F
di et	2	104.0000000	52.0000000	6.00	0.0221

Least Squares Means

di et	wg LSMEAN	95% Confidence Limits	
A	32.000000	28.670195	35.329805
B	25.000000	21.670195	28.329805
C	30.000000	26.670195	33.329805

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
High Protein vs. Lower Protein	1	96.0000000	96.0000000	11.08	0.0088
High Protein vs. High Protein	1	8.0000000	8.0000000	0.92	0.3618

Parameter	Estimate	Standard Error	t Value	Pr > t
Diet A Mean	32.000000	1.47196014	21.74	<.0001
Diet A Mean - Diet B Mean	7.000000	2.08166600	3.36	0.0084
High Protein vs. Lower Protein	6.000000	1.80277564	3.33	0.0088
High Protein vs. Lower Protein (2)	6.000000	1.80277564	3.33	0.0088
High Protein vs. High Protein	2.000000	2.08166600	0.96	0.3618

Parameter	95% Confidence Limits	
Diet A Mean	28.6701948	35.3298052
Diet A Mean - Diet B Mean	2.2909443	11.7090557
High Protein vs. Lower Protein	1.9218382	10.0781618
High Protein vs. Lower Protein (2)	1.9218382	10.0781618
High Protein vs. High Protein	-2.7090557	6.7090557