

```
/* SAS program for 1-way AOV,      */
/* illustrating use of indicator   */
/* variables and multiple         */
/* regression.  Data from ex 8.2,  */
/* text                            */
```

```
options nocenter ls=72;
```

```
data old;
```

```
input y trt;
```

```
if trt=1 then x1=1;
```

```
else x1=0;
```

```
if trt=2 then x2=1;
```

```
else x2=0;
```

```
cards;
```

```
96 1
```

```
79 1
```

```
91 1
```

```
85 1
```

```
83 1
```

```
91 1
```

```
82 1
```

```
87 1
```

```
77 2
```

```
76 2
```

```
74 2
```

```
73 2
```

```
78 2
```

```
71 2
```

```
80 2
```

```
66 3
```

```
73 3
```

```
69 3
```

```
66 3
```

```
77 3
```

```
73 3
```

```
71 3
```

```
70 3
```

```
74 3
```

```
;
```

```
proc glm data=old;
```

```

class trt;
model y=trt;
means trt;
output out=new1 predicted=yhat1;
proc reg data=old;
model y=x1 x2;
output out=new2 predicted=yhat2;
data final;
merge new1 new2;
proc print;
run;

```

The GLM Procedure

Class Level Information

Class	Levels	Values
trt	3	1 2 3
Number of Observations Read		24
Number of Observations Used		24

Dependent Variable: y

Source	DF	Sum of Squares	Mean Square	F Value
Model	2	1090.619048	545.309524	29.57
Error	21	387.214286	18.438776	
Corrected Total	23	1477.833333		

Source	Pr > F
Model	<.0001

R-Square	Coeff Var	Root MSE	y Mean
0.737985	5.534745	4.294040	77.58333

Source	DF	Type I SS	Mean Square	F Value
trt	2	1090.619048	545.309524	29.57

Source	Pr > F
trt	<.0001

Level of	-----y-----		
trt	N	Mean	Std Dev
1	8	86.7500000	5.62519841
2	7	75.5714286	3.10145895
3	9	71.0000000	3.67423461

The REG Procedure

Model: MODEL1

Dependent Variable: y

Number of Observations Read 24

Number of Observations Used 24

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1090.61905	545.30952	29.57	<.0001
Error	21	387.21429	18.43878		
Corrected Total	23	1477.83333			

Root MSE	4.29404	R-Square	0.7380
Dependent Mean	77.58333	Adj R-Sq	0.7130
Coeff Var	5.53474		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	71.00000	1.43135	49.60	<.0001
x1	1	15.75000	2.08653	7.55	<.0001
x2	1	4.57143	2.16399	2.11	0.0468

Obs	y	trt	x1	x2	yhat1	yhat2
1	96	1	1	0	86.7500	86.7500
2	79	1	1	0	86.7500	86.7500
3	91	1	1	0	86.7500	86.7500
4	85	1	1	0	86.7500	86.7500
5	83	1	1	0	86.7500	86.7500
6	91	1	1	0	86.7500	86.7500
7	82	1	1	0	86.7500	86.7500
8	87	1	1	0	86.7500	86.7500
9	77	2	0	1	75.5714	75.5714
10	76	2	0	1	75.5714	75.5714
11	74	2	0	1	75.5714	75.5714
12	73	2	0	1	75.5714	75.5714
13	78	2	0	1	75.5714	75.5714
14	71	2	0	1	75.5714	75.5714
15	80	2	0	1	75.5714	75.5714
16	66	3	0	0	71.0000	71.0000
17	73	3	0	0	71.0000	71.0000
18	69	3	0	0	71.0000	71.0000
19	66	3	0	0	71.0000	71.0000
20	77	3	0	0	71.0000	71.0000
21	73	3	0	0	71.0000	71.0000
22	71	3	0	0	71.0000	71.0000
23	70	3	0	0	71.0000	71.0000
24	74	3	0	0	71.0000	71.0000