A study by Apex Enterprises investigated the ratings of potential employees by its personnel officers. Five personnel officers were selected at random, and four prospective employees were assigned at random to each selected officer.

```
options nodate nonumber ls=80 nocenter;
data apex;
input Officer  $ Rating;
datalines;
A 76
A 65
A 85
A 74
B 59
B 75
B 81
B 67
C 49
C 63
C 61
C 46
D 74
D 71
D 85
D 89
E 66
E 84
E 80
E 79
;

proc glm;
class officer;
model rating = officer;
random officer / test;
run;
```

The SAS System

The GLM Procedure

     Class Level Information

Class   Levels   Values

Officer   5   A B C D E

Number of Observations Read   20
Number of Observations Used   20

The SAS System

The GLM Procedure

Dependent Variable: rating

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	1579.700000	394.925000	5.39	0.0068
Error	15	1099.250000	73.283333		
Corrected Total	19	2678.950000			

R-Square	Coeff Var	Root MSE	rating Mean
0.589671	11.98120	8.560569	71.45000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Officer	4	1579.700000	394.925000	5.39	0.0068

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Officer	4	1579.700000	394.925000	5.39	0.0068

The SAS System

The GLM Procedure

Source	Type III Expected Mean Square
Officer	Var(Error) + 4 Var(Officer)

The SAS System

The GLM Procedure
Tests of Hypotheses for Random Model Analysis of Variance

Dependent Variable: rating

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Officer	4	1579.700000	394.925000	5.39	0.0068
Error: MS(Error)	15	1099.250000	73.283333		