

```

37      PROC REG DATA=ONE;  TITLE2 'Sub Models';
38      MODEL Y = X1;
39      MODEL Y = X2;
40      MODEL Y = X3;
41      MODEL Y = X1 X2 / SS2;
42      MODEL Y = X1 X3 / SS2;
43      MODEL Y = X2 X3 / SS2;
44      MODEL Y = X1 X2 X3 / SS2; RUN;

```

Model: MODEL1 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	5957.02249	5957.02249	14.817	0.0014
Error	16	6432.58862	402.03679		
C Total	17	12389.61111			

Model: MODEL2 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	1556.70846	1556.70846	2.299	0.1489
Error	16	10832.90265	677.05642		
C Total	17	12389.61111			

Model: MODEL3 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	1620.75928	1620.75928	2.408	0.1403
Error	16	10768.85183	673.05324		
C Total	17	12389.61111			

Model: MODEL4 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	5975.66853	2987.83427	6.988	0.0072
Error	15	6413.94258	427.59617		
C Total	17	12389.61111			

Model: MODEL5 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	6790.21357	3395.10678	9.095	0.0026
Error	15	5599.39754	373.29317		
C Total	17	12389.61111			

Model: MODEL6

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	2411.96162	1205.98081	1.813	0.1971
Error	15	9977.64949	665.17663		
C Total	17	12389.61111			

Model: MODEL7

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	6806.11145	2268.70382	5.689	0.0092
Error	14	5583.49966	398.82140		
C Total	17	12389.61111			

Model and Error SS for different combinations of variables.

$SSR(X_1) = 5957.02249$	$SSE = 6432.58862$
$SSR(X_2) = 1556.70846$	$SSE = 10832.90265$
$SSR(X_3) = 1620.75928$	$SSE = 10768.85183$
$SSR(X_1, X_2) = 5975.66853$	$SSE = 6413.94258$
$SSR(X_1, X_3) = 6790.21357$	$SSE = 5599.39754$
$SSR(X_2, X_3) = 2411.96162$	$SSE = 9977.64949$
$SSR(X_1, X_2, X_3) = 6806.11145$	$SSE = 5583.49966$

Model SS for each term adjusted for one other.

These values are calculated as $SSR(X_k | X_l) = SSR(X_k, X_l) - SSR(X_l)$

$SSR(X_1 X_2) = 4418.960069$
$SSR(X_1 X_3) = 5169.454291$
$SSR(X_2 X_1) = 18.646037$
$SSR(X_2 X_3) = 791.202345$
$SSR(X_3 X_1) = 833.191073$
$SSR(X_3 X_2) = 855.253158$

Model SS for each term adjusted for two others. These are the partial SS for a 3 factor multiple regression.

These values are calculated as $SSR(X_k | X_l, X_m) = SSR(X_k, X_l, X_m) - SSR(X_k, X_l)$

$SSR(X_1 X_2, X_3) = 4394.149832$
$SSR(X_2 X_1, X_3) = 15.897886$
$SSR(X_3 X_1, X_2) = 830.442921$