

# JMP Analysis of Latin Square Experiment

## Brand of Tire and Fuel Economy

### Response mpg

#### Summary of Fit

RSquare	0.946374
RSquare Adj	0.865935
Root Mean Square Error	0.124365
Mean of Response	6.7825
Observations (or Sum Wgts)	16

#### Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	9	1.6377000	0.181967	11.7651
Error	6	0.0928000	0.015467	Prob > F
C. Total	15	1.7305000		0.0036

#### Effect Tests

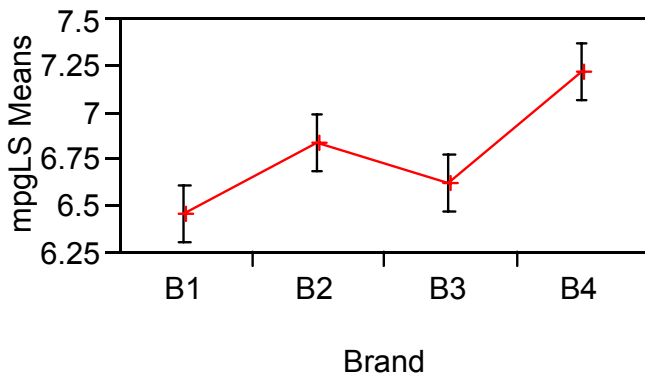
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
Brand	3	3	1.3070500	28.1692	0.0006
Day	3	3	0.2630000	5.6681	0.0348
Truck	3	3	0.0676500	1.4580	0.3170

#### Effect Details: Brand

##### Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
B1	6.4550000	0.06218253	6.45500
B2	6.8325000	0.06218253	6.83250
B3	6.6225000	0.06218253	6.62250
B4	7.2200000	0.06218253	7.22000

#### LS Means Plot



**LSMeans Differences Student's t: Alpha=0.050 t=2.44691**

**LSMean[i] By LSMean[j]**

Mean[i]-Mean[j] Std Err Dif Lower CL Dif Upper CL Dif	B1	B2	B3	B4
<b>B1</b>	0 0 0 0	<b>-0.3775</b> <b>0.08794</b> <b>-0.5927</b> <b>-0.1623</b>	-0.1675 0.08794 -0.3827 0.04768	<b>-0.765</b> <b>0.08794</b> <b>-0.9802</b> <b>-0.5498</b>
<b>B2</b>	<b>0.3775</b> <b>0.08794</b> <b>0.16232</b> <b>0.59268</b>	0 0 0 0	0.21 0.08794 -0.0052 0.42518	<b>-0.3875</b> <b>0.08794</b> <b>-0.6027</b> <b>-0.1723</b>
<b>B3</b>	0.1675 0.08794 -0.0477 0.38268	-0.21 0.08794 -0.4252 0.00518	0 0 0 0	<b>-0.5975</b> <b>0.08794</b> <b>-0.8127</b> <b>-0.3823</b>
<b>B4</b>	<b>0.765</b> <b>0.08794</b> <b>0.54982</b> <b>0.98018</b>	<b>0.3875</b> <b>0.08794</b> <b>0.17232</b> <b>0.60268</b>	<b>0.5975</b> <b>0.08794</b> <b>0.38232</b> <b>0.81268</b>	0 0 0 0

Level		Least Sq Mean
B4	A	7.2200000
B2	B	6.8325000
B3	B C	6.6225000
B1	C	6.4550000

Levels not connected by same letter are significantly different

**LSMeans Differences Tukey HSD: Alpha=0.050 Q=3.46172**

**LSMean[i] By LSMean[j]**

Mean[i]-Mean[j] Std Err Dif Lower CL Dif Upper CL Dif	B1	B2	B3	B4
<b>B1</b>	0 0 0 0	<b>-0.3775</b> <b>0.08794</b> <b>-0.6819</b> <b>-0.0731</b>	-0.1675 0.08794 -0.4719 0.13692	<b>-0.765</b> <b>0.08794</b> <b>-1.0694</b> <b>-0.4606</b>
<b>B2</b>	<b>0.3775</b> <b>0.08794</b> <b>0.07308</b> <b>0.68192</b>	0 0 0 0	0.21 0.08794 -0.0944 0.51442	<b>-0.3875</b> <b>0.08794</b> <b>-0.6919</b> <b>-0.0831</b>
<b>B3</b>	0.1675 0.08794 -0.1369 0.47192	-0.21 0.08794 -0.5144 0.09442	0 0 0 0	<b>-0.5975</b> <b>0.08794</b> <b>-0.9019</b> <b>-0.2931</b>
<b>B4</b>	<b>0.765</b> <b>0.08794</b> <b>0.46058</b> <b>1.06942</b>	<b>0.3875</b> <b>0.08794</b> <b>0.08308</b> <b>0.69192</b>	<b>0.5975</b> <b>0.08794</b> <b>0.29308</b> <b>0.90192</b>	0 0 0 0

Level		Least Sq Mean
B4	A	7.2200000
B2	B	6.8325000
B3	B C	6.6225000
B1	C	6.4550000

Levels not connected by same letter are significantly different