

that the three size categories have the same mean highway fuel consumption. Does the size of a car appear to affect highway fuel consumption?

#### TI-83/84 PLUS

```
One-way ANOVA
F=11.61019737
P=5.773554E-4
Factor
df=2
SS=224.095238
↓ MS=112.047619
```

**8. City Fuel Consumption** Data Set 14 in Appendix B lists city fuel consumption amounts (mi/gal) for cars categorized by size (small, midsize, large). If we use those city fuel consumption amounts arranged into the three separate size categories, we get the STATDISK results shown here. Using a 0.05 significance level, test the claim that the three size categories have the same mean city fuel consumption. Does the size of a car appear to affect city fuel consumption?

#### STATDISK

Source:	DF:	SS:	MS:	Test Stat, F:	Critical F:	P-Value:
Treatment:	2	209.809524	104.904762	23.945652	3.554561	0.000008
Error:	18	78.857143	4.380952			
Total:	20	288.666667				

**9. Head Injury Crash Test Data** Exercises 1–4 use chest deceleration data for three different size categories (small, midsize, large). The data are from a standard crash test and they are listed in Data Set 13 in Appendix B. If we use the head injury measurements (in HIC, which is a standard head injury criterion) with the same three size categories, we get the SPSS results shown here. Using a 0.05 significance level, test the claim that the three size categories have the same mean head injury measurement. Does the size of a car appear to affect head injuries?

#### SPSS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7366.952	2	3683.476	.161	.852
Within Groups	411540.286	18	22863.349		
Total	418907.238	20			

**10. Pelvis Injury Crash Test Data** Exercises 1–4 use chest deceleration data for three different size categories (small, midsize, large). The data are from a standard crash test and they are listed in Data Set 13 in Appendix B. If we use the pelvis injury measurements (g) with the same three size categories, we get the XLSTAT results shown here. Using a 0.05 significance level, test the claim that the three size categories have the same mean pelvis injury measurement. Does the size of a car appear to affect pelvis injuries?

#### XLSTAT

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	79.1429	39.5714	0.3476	0.7111
Error	18	2049.4286	113.8571		
Corrected	20	2128.5714			

**11. Triathlon Times** Jeff Parent is a statistics instructor who participates in triathlons. Listed below are times (in minutes and seconds) he recorded while riding a bicycle for five laps through each mile of a 3-mile loop. Use a 0.05 significance level to test the claim that it takes the same time to ride each of the miles. Does one of the miles appear to have a hill?