EXERCISES USING SPSS

1.
```
ONEWAY
    colratio BY diet
    /STATISTICS DESCRIPTIVES
    /MISSING ANALYSIS
    /POSTHOC = LSD ALPHA(.05).
```

Oneway

Descriptives

COLRATIO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	10	2.2800	.3824	.1209	2.0065	2.5535	1.60	2.80
2.00	10	1.7200	.1619	5.121E-02	1.6042	1.8358	1.50	2.00
3.00	9	2.1222	.3032	.1011	1.8891	2.3553	1.60	2.50
4.00	7	2.3429	.4077	.1541	1.9658	2.7199	1.60	2.80
Total	36	2.0972	.3953	6.589E-02	1.9635	2.2310	1.50	2.80

Post Hoc Tests

Multiple Comparisons

Dependent Variable: COLRATIO
LSD

| (I) DIET	(J) DIET	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	.5600*	.143	.000	.2681	.8519
	3.00	.1578	.147	.292	-.1421	.4576
	4.00	-6.2857E-02	.158	.693	-.3845	.2587
2.00	1.00	-.5600*	.143	.000	-.8519	-.2681
	3.00	-.4022*	.147	.010	-.7021	-.1024
	4.00	-.6229*	.158	.000	-.9445	-.3013
3.00	1.00	-.1578	.147	.292	-.4576	.1421
	2.00	.4022*	.147	.010	.1024	.7021
	4.00	-.2206	.161	.181	-.5495	.1082
4.00	1.00	6.286E-02	.158	.693	-.2587	.3845
	2.00	.6229*	.158	.000	.3013	.9445
	3.00	.2206	.161	.181	-.1082	.5495

*. The mean difference is significant at the .05 level.

Means Plots
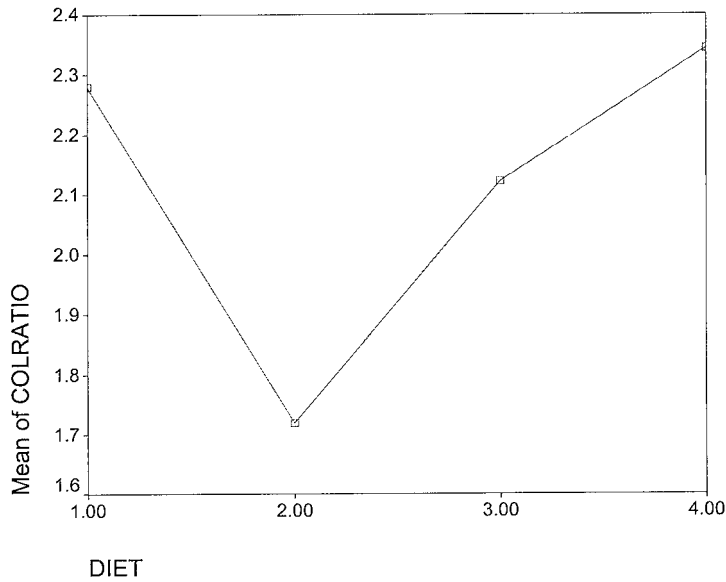
DIET

```
GRAPH
  /ERRORBAR( CI 95 )=colratio BY diet
  /MISSING=REPORT.
```

Graph
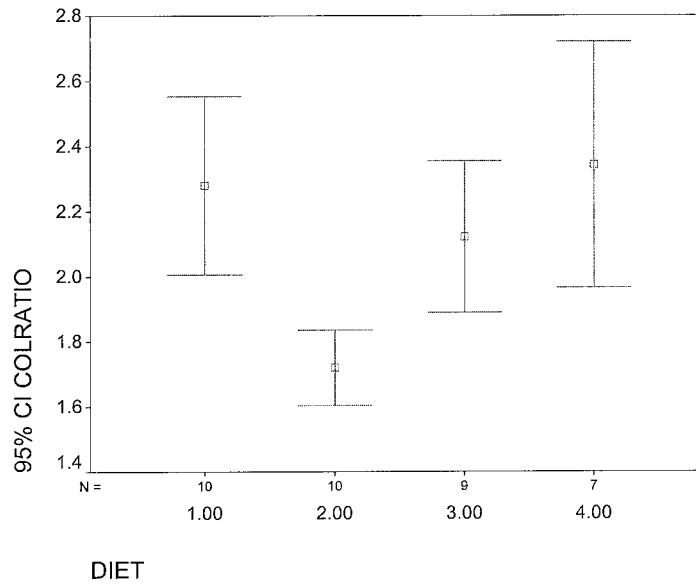
DIET

Conclusion: The ANOVA conducted on the four-diet group indicated there was a significant effect for type of diet on cholesterol ratio—they were not all the same, $F(3, 32) = 7.096$, $p = .001$. Diet 2 had the best (lowest) ratio, significantly lower than Diets 1, 3, and 4, which did not differ by the LSD test, $p < .05$.

2. *Note.* Only the necessary portions of the output are given. Your solution will generate additional output that should be ignored.

```
GLM
   begin middle end
   /WSFACTOR = factor1 3 Polynomial
   /METHOD = SSTYPE(3)
   /PLOT = PROFILE( factor1 )
   /PRINT = DESCRIPTIVE
   /CRITERIA = ALPHA(.05)
   /WSDESIGN = factor1 .
```

General Linear Model

Within-Subjects Factors

Measure: MEASURE_1

FACTOR1	Dependent Variable
1	BEGIN
2	MIDDLE
3	END

Descriptive Statistics

	Mean	Std. Deviation	N
BEGIN	22.1000	3.2472	10
MIDDLE	23.1000	3.8137	10
END	24.7000	3.8312	10

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
FACTOR1	Sphericity Assumed	34.400	2	17.200	40.737	.000
	Greenhouse-Geisser	34.400	1.652	20.821	40.737	.000
	Huynh-Feldt	34.400	1.976	17.406	40.737	.000
	Lower-bound	34.400	1.000	34.400	40.737	.000
Error(FACTOR1)	Sphericity Assumed	7.600	18	.422		
	Greenhouse-Geisser	7.600	14.870	.511		
	Huynh-Feldt	7.600	17.787	.427		
	Lower-bound	7.600	9.000	.844		

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	16286.700	1	16286.700	418.442	.000
Error	350.300	9	38.922		

Profile Plots

Estimated Marginal Means of MEASURE