* Using Data set “G,” choose the dependent variable (the response variable to be “explained”) and the independent variable (the predictor or explanatory variable) as you judge appropriate. Use a spreadsheet or a statistical package (e.g., MegaStat or MINITAB) to obtain the bivariate regression and required graphs. Write your answers to exercises 12.28 through 12.43 (or those assigned) in a concise report, labeling your answers to each question. Insert tables and graphs in your report as appropriate.

12.28 Are the variables cross-sectional data or time-series data?

12.31 State your a priori hypothesis about the sign of the slope. Is it reasonable to suppose a cause and effect relationship?

12.35 Use Excel, MegaStat, or MINITAB to fit the regression model, including residuals and standardized residuals.

12.36 (a) Does the 95 percent confidence interval for the slope include zero? If so, what does it mean? If not, what does it mean? (b) Do a two-tailed t test for zero slope at α = .05. State the hypotheses, degrees of freedom, and critical value for your test. (c) Interpret the p-value for the slope. (d) Which approach do you prefer, the t test or the p-value? Why? (e) Did the sample support your hypothesis about the sign of the slope?

12.37 (a) Based on the R2 and ANOVA table for your model, how would you assess the fit? (b) Interpret the p-value for the F statistic. (c) Would you say that your model’s fit is good enough to be of practical value?

**DATA SET G Mileage and Vehicle weight MPG**

***Vehicle City MPG Weight******Vehicle City MPG Weight***

Acura CL 20 3,450 Land Rover 17 3,640

Acura TSX 23 3,320 Lexus IS 300 18 3,390

BMW 3 Series 19 3,390 Lincoln Aviator 13 5,000

Buick Century 20 3,350 Mazda MPV 18 3,925

Buick Rendezvous 18 4,230 Mazda 6 19 3,355

Cadillac Seville 18 4,050 Mercedes-Benz S-Class 17 4,195

Chevy Corvette 19 3,255 Mercury Sable 20 3,340

Chevy Silverado 1500 14 4,935 Mitsubishi Galant 20 3,285

Chevy TrailBlazer 15 4,660 Nissan 350Z 20 3,345

Chrysler Pacifica 17 4,660 Nissan Pathfinder 15 4,270

Dodge Caravan 18 4,210 Nissan Xterra 16 4,315

Dodge Ram 1500 13 5,300 Pontiac Grand Am 25 3,095

Ford Expedition 13 5,900 Pontiac Vibe 28 2,805

Ford Focus 26 2,760 Saturn Ion 24 2,855

GMC Envoy 15 4,660 Subaru Baja 21 3,575

Honda Accord 21 3,390 Suzuki Vitara XL7 17 3,590

Honda Odyssey 18 4,315 Toyota Celica 23 2,570

Hyundai Elantra 24 2,880 Toyota Matrix 26 2,985

Infinity FX 16 4,295 Toyota Sienna 19 4,120

Isuzu Ascender 15 4,965 Volkswagen Jetta 34 3,045

Jaguar XJ8 18 3,805 VolvoC70 20 3,690

Kia Rio 25 2,295