Each of the following exercises includes the data set required to complete the exercise.

1. Using the data file DISPOSABLE INCOME AND VEHICLE SALES, SOLUTION the following:
    a. Plot a scatter diagram.
    b. Determine the regression equation.
    c. Plot the regression line.
    d. Compute the predicted vehicle sales for disposable income of $16,500 and of $17,900.
    e. Compute the coefficient of determination and the coefficient of correlation
2. Managers model costs in order to make predictions. The cost data in the data file INDIRECT COSTS AND MACHINE HOURS show the indirect manufacturing costs of an ice-skate manufacturer. Indirect manufacturing costs include maintenance costs and setup costs. Indirect manufacturing costs depend on the number of hours the machines are used, called machine hours. Based on the data for January to December, SOLUTION the following:
    a. Plot a scatter diagram.
    b. Determine the regression equation.
    c. Plot the regression line.
    d. Compute the predicted indirect manufacturing costs for 300 machine hours and for 430 machine hours.
    e. Compute the coefficient of determination and the coefficient of correlation.
3. The manager of a shipping department would like to develop a model to predict the amount of time it takes to complete a given volume of shipments. The manager has collected 30 days of data in the data file SHIPMENTS AND COMPLETION TIME . Based on the data, SOLUTION the following:
    a. Plot a scatter diagram.
    b. Determine the regression equation.
    c. Plot the regression line
    d. Compute the predicted completion time for a volume of shipments of 300 and of 900.
    e. Compute the coefficient of determination and the coefficient of correlation.
4. Using the data file HORSEPOWER :
    a. Construct a scatter diagram of automobile horsepower (dependent variable is HORSEPOWER) and engine size (independent variable is ENGINE SIZE).
    b. Determine the regression equation.
    c. Plot the regression line and compute the coefficient of determination.
5. Using the data file FUEL CONSUMPTION :
    a. Construct a scatter diagram of automobile fuel consumption (dependent variable is FUEL CONSUMPTION) and engine size (independent variable is ENGINE SIZE).
    b. Determine the regression equation.
    c. Plot the regression line and compute the coefficient of determination.