URGENT TIME CONSTRAINTS:: My first expert let me down. I posted originally two days ago. Ended up refunding me rather than answer my questions. My due date was extended until tonight Mon. Sept 12, 2016. I need this by 10:00pm eastern standard time. I also need the Excel Files dated Sept.11,2016. As my original due date was Sept. 11, 2016

Use the Data Analysis Add-In for Microsoft Excel to answer #30,#31, #32.

30) A sample of nine private and nine public universities was taken. The total cost for the year (including room & board) and the median SAT score (maximum total is 2400) at each school were recorded. It was felt that schools with higher median SAT scores would have a better reputation and charge more tuition as a result of that. The data is in the table below. **Use regression to help answer the following questions based on this sample data**. Do schools with higher SAT scores charge more in tuition and fees? Are private schools more expensive than public schools when SAT scores are taken into consideration? Discuss how accurate you believe these results are using information related to the regression models.

CATEGORY TOTAL COST$ MEDIAN SAT

Public $21,700 1990

Public $15,600 1620

Public $16,900 1810

Public $15,400 1540

Public $23,100 1540

Public $21,400 1600

Public $16,500 1560

Public $23,500 1890

Public $20,200 1620

30) continued

CATEGORY TOTAL COST$ MEDIAN SAT

Private $30,400 1630

Private $41,500 1840

Private $36,100 1980

Private $42,100 1930

Private $27,100 2130

Private $34,800 2010

Private $32,100 1590

Private $31,800 1720

Private $32,100 1770

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31)In 2008 the total payroll for the New York Yankees was $209.1 million, while the total payroll for the Tampa Bay Rays was about $43.8 million, or about one- fifth (1/5) that of the Yankees. Many people have suggested that some teams are able to buy winning seasons and championships by spending a lot of money on the most talented players available. The table below lists the payrolls (in Millions of dollars) for all 14 Major League Baseball teams in the American League as well as the total number of victories for each in the 2008 season.

Develop a regression model to predict the total number victories based on the payroll of a team. Based on the results of the computer output, discuss how accurate this model is. Use the model to predict the number of victories for a team with a payroll of $79 million.

TEAM Payroll $millions Number of victories

New York Yankees 209.1 89

Detroit Tigers 138.7 74

Boston Red Sox 133.4 95

Chicago White Sox 121.2 89

Cleveland Indians 79.0 81

Baltimore Orioles 67.2 68

Oakland Athletics 48.0 75

Las Angeles Angels 119.2 100

Seattle Mariners 118.00 61

Toronto Blue Jays 98.6 86

Minnesota Twins 62.2 88

Kansas City Royals 58.2 75

Tampa Bay Rays 43.8 97

Texas Rangers 68.2 79

32)In 2009 the New York Yankees won 103 baseball games in the regular season. The table below lists the number of wins (W), the earned- run average (ERA), and the batting average (AVG) of each team in the American League. The ERA is one measure of the effectiveness of the pitching staff, and a lower number is better. The batting average is one measure of the effectiveness of the hitters, and a higher number is better.

1. Develop a regression model that could be used to predict the number of victories based on the ERA.
2. Develop a regression model that could be used to predict the number of victories based on the batting average.
3. Which of the two models is better for predicting the number of victories?
4. Develop a multiple regression model that includes both ERA and batting average. How does this compare to the previous models?

TEAM W ERA AVG

New York Yankees 103 4.26 .283

Las Angeles Angels 97 4.45 .285

Boston Red Sox 95 4.35 .270

Minnesota Twins 87 4.50 .274

Texas Rangers 87 4.38 .260

Detroit Tigers 86 4.29 .260

Seattle Mariners 85 3.87 .258

Tampa Bay Rays 84 4.33 .263

Chicago White sox 79 4.14 .258

32) continued

TEAM W ERA AVG

Toronto Blue Jays 75 4.47 .266

Oakland Athletics 75 4.26 .262

Cleveland Indians 65 5.06 .264

Kansas City Royals 65 4.83 .259

Baltimore Orioles 64 5.15 .268

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Chapter 5, pages 188-189, Problems 25 and 31 using

Excel’s Data Analysis Add-In

25)A major source of revenue in Texas is state sales tax on certain types of goods and services. Data are compiled and the state comptroller uses them to project future revenues for future the state budget. One particular category of goods is classified as Retail Trade. Four years of quarterly data (in $millions) for one particular area of southeast Texas Follow:

Quarter year 1 year 2 year 3 year 4

1 218 225 234 250

2 247 254 265 283

3 243 255 264 289

4 292 299 327 356

1. Compute seasonal indices for each quarter based on a CMA.
2. Deseasonalize the data and develop a trend line on the deseasonalized data.
3. Use the trend line to forecast the sales for each quarter of year 5.
4. Use the seasonal indices to adjust the forecasts found in part (C) to obtain the final forecasts.

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31) Sales of industrial vacuum cleaners at R. Lowenthal Supply Co. over the past 13 months are as follows:

Sales in ($1000’s) Month Sales in ($1000’s) Month

11 Jan. 14 Aug.

14 Feb. 17 Sept.

16 Mar. 12 Oct.

10 Apr. 14 Nov.

15 May 16 Dec.

17 Jun. 11 Jan.

11 Jul.

1. Using a moving average with three periods, determine the demand for vacuum cleaners for next February.
2. Using a weighted moving average with three periods, determine the demand for vacuum cleaners next February. Use 3,2,and 1 for the weights of the most recent, second most recent, and third most recent periods respectively. For example, if you were forecasting the demand for February, November would have a weight of 1, December would have a weight of 2, and January would have a weight of 3.
3. Evaluate the accuracy of each of these methods.
4. What other factors might R. Lowenthal consider in forecasting sales?