1 Problems

Problems are from IPS6e unless otherwise indicated.

Problems from Chapter 10:
10.6 p.594 – What’s wrong?  
10.13 p.595 – Beer and blood alcohol.  
10.23 p.598 – Is the number of tornadoes increasing?  
10.24 p.598 – More on the number of tornadoes.  
10.30 p.600 – Reading test scores and IQ. (Uses data from Exercise 2.11 p.95.)  
10.34 p.600 – Math pretest predicts success?  
10.56 p.604 – Length, width, and weight of perch.  
10.57 p.605 – Transforming the perch data.  
10.58 p.605 – Creating a new explanatory variable.

Problems from Chapter 11:
11.7 p.628 – 95% confidence intervals for regression coefficients.  
11.11 p.628 – Constructing the ANOVA table.  
11.13 p.628 – Childhood obesity.  
11.15 p.629 – Predicting substance abuse.  
11.31 p.633 – Predicting a nation’s “average happiness” score.  
11.32 p.633 – Building a linear regression model.  
11.33 p.633 – Selecting from among several models.

2 Additional Software Instructions

2.1 Problem 10.24 p.598

Data for this problem are in data set ta10_004 . xls . You have to identify the observation on the number of tornadoes for year 2004. To identify that case you could use the command

. list if year==2004

+-----------------+
To do the regression without that case you could use the command

```
. reg count year if year!=2004
```

where `!=` means “is not equal to”. To learn more on logical operators use `help operators`.

Equivalently, you could use

```
. reg count year if (!_n==52)
```

(_n is an internal Stata variable that contains the order of the case in the file.)

### 2.2 Problem 10.24 p.598

The data for this problem are in file `ex10_030.xls`. First draw a plot of `read` against `iq` with the command

```
. twoway (lfit read iq) (scatter read iq)
```

or examine the graph in the textbook for Exercise 2.11 p.95 (Figure 2.6 p.96). Make sure you understand why the following command identifies the four outliers on the plot

```
. list if read<25 & iq>100
```

Then you can produce the desired regression (omitting the four outliers) with

```
. reg read iq if !(read<25 & iq>100)
```

### 2.3 Problems 10.56, 10.57 and 10.58 pp.604–605

The data for these problems are in file `ex10_56.xls`. You will have to create new variables using commands such as

```
. generate len2=length^2
```

```
. generate lenwid=length*width
```

If you make a mistake and want to reuse a variable that you have already created, you have to use `replace` (no abbreviation) instead of `generate`. 