Chapter 10: Re-expressing Data

Key Vocabulary:

- Re-expression

Calculator Skills:

- log(
- ln(
- LnReg
- ExpReg
- PwrReg
- QuadReg
- CubicReg

1. What is meant by re-expressing data?

2. One of the goals of re-expressing data is to make the distribution appear more symmetric. Why is this advantageous?

3. Another goal of re-expressing data is to make the spread of several groups more alike. Why is this advantageous?

4. Why is it advantageous to make the form of a scatterplot more nearly linear?

5. What type of data often benefits from re-expression by squaring values?

6. What type of data often benefits from re-expression by taking the square root of values?

7. What type of data often benefits from re-expression by taking the logarithm of values?

8. What type of data often benefits from re-expression by taking the reciprocal of values?

9. If your data contain zeroes, what must you do before re-expressing using logarithms or reciprocals? Explain.

10. If a scatterplot of the x-values vs. the logarithm of the y-values appears to be linear, what type of relationship is there between the original x- and y-values?

11. Rewrite $\hat{y} = ab^x$ in linear form.

12. If a scatterplot of the logarithm of the x-values vs. the logarithm of the y-values appears to be linear, what type of relationship is there between the original x- and y-values?

13. Rewrite $\hat{y} = ax^b$ in linear form.

14. If a scatterplot of the logarithm of the x-values vs. the y-values appears to be linear, what type of relationship is there between the original x- and y-values?

15. Rewrite $\hat{y} = a + b \ln x$ in linear form.