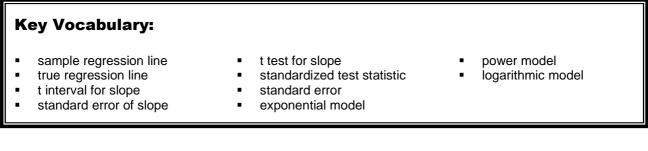
Chapter 12: More about Regression



12.1 Inference for Linear Regression (pp.739-757)

- 1. What is the difference between a *sample regression line* and *population (true) regression line*?
- 2. Explain the *sampling distribution* of *b*?
- 3. Give the equation for the *true regression line*, and state what each component of the equation represents.
- 4. Summarize the *conditions* for regression inference:
- L
- I
- N
- E
- R

- 5. Explain how to *check the conditions* for regression inference:
- L
- I
- N
- E
- R
- 6. Record the formula for the *standard error of the slope*? Define the variables.
- 7. What is the formula for the *t-interval of the slope* of a least-squares regression line? Is this on the AP exam formula sheet?
- 8. What is the formula for the *t-test for the slope* of the population regression line? Is this on the AP exam formula sheet?
- 9. Describe the distribution of the *standardized test statistic* $\frac{b-\beta}{SE_b}$.
- 10. What is the formula for constructing a *confidence interval for a slope*?

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- 11. What calculator commands are used to get the value of t^* ?
- 12. Can you use your calculator to conduct a test and confidence interval for the slope?

12.2 Transforming to Achieve Linearity (pp.765-783)

- 1. What does it mean to *transform data*?
- 2. What is a *power model*?
- 3. Give three *examples* of power models?
- 4. Aside from power transformations, how can you *linearize an association* that follows a power model in the form $y = ax^{p}$?
- 5. Describe a *logarithmic model*. Give two examples.
- 6. Describe an *exponential model*. Give two examples.
- 7. Describe the two methods used to linearize a relationship that follows an exponential model.
- 8. Show how to use logarithms to transform the data given by $y = ax^p$ to produce a linear relationship.

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- 9. The big idea using logarithms to transform data is that "if a variable grows ______, its ______ grow linearly."
- 10. Describe how to *achieve linearity* from a power model as explained on page 777.
- 11. After using a logarithm transformation, what does the *scatter plot* of the data show?