

## **Brase, Understanding Basic Statistics, TOC**

### **1. GETTING STARTED.**

What is Statistics? Random Samples. Introduction to Experimental Design.

### **2. ORGANIZING DATA.**

Frequency Distributions, Histograms, and Related Topics. Bar Graphs, Circle Graphs, and Time-Series Graphs. Stem-and-Leaf Displays.

### **3. AVERAGES AND VARIATION.**

Measures of Central Tendency: Mode, Median, and Mean. Measures of Variation. Percentiles and Box-and-Whisker Plots.

### **4. CORRELATION AND REGRESSION.**

Scatter Diagrams and Linear Correlation. Linear Regression and the Coefficient of Determination.

### **5. ELEMENTARY PROBABILITY THEORY.**

What is Probability? Some Probability Rules—Compound Events. Trees and Counting Techniques.

### **6. THE BINOMIAL PROBABILITY DISTRIBUTION AND RELATED TOPICS.**

Introduction to Random Variables and Probability Distributions. Binomial Probabilities. Additional Properties of the Binomial Distribution.

### **7. NORMAL CURVES AND SAMPLING DISTRIBUTIONS.**

Graphs and Normal Probability Distributions. Standard Units and Areas Under the Standard Normal Distribution. Areas Under Any Normal Curve. Sampling Distributions. The Central Limit Theorem. Normal Approximation to the Binomial Distribution and to  $p^*$  Distribution.

### **8. ESTIMATION.**

Estimating  $\mu$  When  $\sigma$  Is Known. Estimating  $\mu$  When  $\sigma$  is Unknown. Estimating  $p$  in a Binomial Distribution.

### **9. HYPOTHESIS TESTING.**

Introduction to Statistical Tests. Testing the Mean  $\mu$ . Testing a Proportion  $p$ .

### **10. INFERENCES ABOUT DIFFERENCES.**

Tests Involving Paired Differences (Dependent Samples). Inferences About the Difference of Two Means  $\mu_1 - \mu_2$ . Inferences About the Difference of Two Proportions  $p_1 - p_2$ .

### **11. ADDITIONAL TOPICS USING INFERENCE.**

Chi-Square: Tests of Independence and of Homogeneity. Chi-Square: Goodness of Fit. Testing and Estimating a Single Variance or Standard Deviation. Inferences for Correlation and Regression.