

## Review Sheet for Midterm Exam #2 POS 3713 - Spring 2007 (Dr. Hensel)

You will have the scheduled class period to complete the exam. No books or notes will be allowed, except for the materials that are provided for you. **You may bring a calculator to use on the exam.**

- The exam covers FNLG chapters 2-5 and 9-12 ; J&R chapters 9 and 11; and all material covered in the lecture notes. The questions will include approximately 20 multiple-choice questions and approximately 10 that involve interpretation and/or simple calculations. A sheet of formulas will be provided for you, along with excerpts from the Standard Normal table (used for calculating and interpreting Z-scores).
- Note that no bathroom breaks are permitted during the exam -- once you leave the room, you can't return. Also, be on time -- once the first person finishes and leaves the room, nobody else can enter.

### General Material to Review:

- Proportion, percentage, ratio, rate: what they're used for, how to calculate, how to interpret
- Pie chart, bar graph, histogram, line graph: what they're used for, how to construct, how to interpret
- Mode, median, mean: what they're used for, how to calculate, how to interpret
- Skew (and symmetric, positively skewed, and negatively skewed distributions): how to identify and interpret
- Index of qualitative variation (IQV): what it's used for, how to calculate, how to interpret
- Range (R), Interquartile range (Q): what they're used for, how to calculate, how to interpret
- Standard deviation ( $\sigma$ ): what it's used for, how to calculate, how to interpret
- Normal curve/distribution: meaning, characteristics, and uses
- Z-scores: what they're used for, how to calculate, how to interpret
- Confidence intervals for means: what they're used for, how to calculate, how to interpret
- Confidence intervals for proportions: what they're used for, how to calculate, how to interpret
- Hypothesis tests (1-sample): what they're used for, how to calculate, how to interpret

### Sample Questions:

- *The FNLG book includes frequent "Learning Check" boxes in most sections of most chapters, which you should find to be very helpful in reviewing the material; also note that an appendix includes the answers to all odd-numbered questions from the end of each chapter, so those offer another useful way to test yourself*
- *The FNLG book's web site has sample questions and quizzes to check your learning:*  
<<http://www.pineforge.com/frankfort-nachmiasstudy4/>>
- *Homework #4 gives you a good idea of the type of questions I will ask on this test.*

### Specific Terms to Review:

Descriptive & inferential statistics

Frequency distribution

Cumulative distribution

Frequency polygon

Time series charts

Percentile

Dispersion/variability

Box plot

Deviation from mean

Sum of squares/Sum of squared deviations

Variance ( $\sigma^2$ )

Standard Normal curve/distribution/table

Populations & samples

Parameters & statistics

Probability sampling

Simple, systematic, stratified random samples

Sampling distribution (meaning and importance)

Central Limit Theorem

Point estimates vs. confidence intervals

Confidence level (and  $\alpha$ )

Hypothesis testing (purpose and basic procedure)

Research hypothesis ( $H_1$ ) & null hypothesis ( $H_0$ )

One tailed v& two-tailed tests of significance

Type I error & Type II error

Statistical significance

Substantive significance

Critical region/value

P-value