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Preface

This study guide is intended as a supplement to your other course materials:

- your textbook;
- the programs in *Against All Odds*; and
- the lectures, presentations and other class projects.

The study guide deals almost exclusively with the “how to” of the statistical methods discussed in the course. This study guide does *not* deal with the critical thinking skills which are an essential feature of research and hence also of this course. The only way to develop these skills is to work through a large number of research scenarios which will expose both techniques and pitfalls. The “word problems” in the lectures, the research projects which your group will present, the research vignettes in your textbook and your group’s survey project are all dedicated to the goal of learning research strategies. These critical thinking skills largely just involve applying “common sense” in an organized and systematic way to collections of data.

Section one deals with frequency tables and histograms; you may find this material useful in preparing your report on your survey data. Section two lays the foundation for means and variances, while section three describes how to use your TI34 calculator to compute these quantities. Section three also has some general information on how to do arithmetic using your calculator. Section four deals with computations using the normal tables.

Each of the remaining sections deals with a particular statistical method. Each section begins with the scenario or context in which the method arises and describes, in general terms, the research objective which the method is designed to achieve. The section then proceeds to a “solution template,” a step by step description of how to solve problems which will arise on the examination. After briefly describing the interpretation of the statistical results, the section turns to a worked example. Each section concludes with problems and a related video assignment. It is vital that

you do as many of these problems as you possibly can. If you are having difficulty with the concepts, you should also try viewing the related program from *Against All Odds*.

There are a number of appendices to this study guide. Appendix A is a normal table. Appendix B gives cutoff values for confidence intervals and hypothesis tests. Appendix C (which is not necessary for the examinations) gives a complete listing of cutoff values for small sample problems. Appendix D is a sample final examination; you should be sure to work all of the problems on this examination before you take the real final examination. Appendix E lists the ethical principles of the American Psychological Association; these are good outline for assessing the ethics of a research design. Appendix F (which is several tables) gives the cutoffs for the F distribution. Appendices G, H and I are tables of symbols, formulae and decision rules needed for your final examination. Appendix X (which also is several tables) lists the cutoffs for the chi squared distribution.

I have tried to make this study guide as “user friendly” as possible. If you have suggestions on how it could be improved, please let me know! I look forward to sharing the journey into the world of research with you.