

STAT 251 Statistical Inference for Management I Winter 2012

Quiz 4

Assigned on Tues Jan 10; due on Wed Jan 11 (at beginning of class). You may work with one partner, submitting one quiz with both names, provided that both of you contribute to the work.

Ian Ayres, the author of a best-selling business book titled *Super Crunchers*, conducted a study to help him decide what to name his book. He placed an ad on google.com, with the ad sometimes giving the title as *Super Crunchers* and other times giving the title as *The End of Intuition*. Google provided Ayres with data on how often a person clicked on the ad to obtain more information, depending on the title given in the ad. It turned out that viewers were 63% more likely to click through on the *Super Crunchers* ad, so that's the title that Ayres chose.

- 1) Was this an observational study or an experiment? Explain how you know.
- 2) Identify the explanatory and response variables.
- 3) Was Ayres justified in concluding that the name *Super Crunchers* caused a higher click-through rate than the other name? Explain why or why not.

I recently read about an article about a study which found that children in the U.S. who have been spanked have a significantly lower IQ score on average than children who have not been spanked.

- 4) Is it legitimate to conclude from this study that spanking a child causes a lower IQ score? Explain why or why not.
- 5) Explain why conducting a randomized experiment to investigate this issue (of whether spanking causes lower IQs) would be possible in principle but ethically objectionable.