Ian Ayers, 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 significantly more likely to click through on the *Super Crunchers* ad than on *The End of Intuition* 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) Fill in the blanks to complete this sentence: Conducting a randomized experiment to investigate this issue (of whether spanking causes lower IQs) would not be feasible or ethical because it would require randomly assigning ________________________________ to ________________________________.