Regression Discontinuity Design

1. (short answer) What is the specific causal effect estimated with sharp RDD and fuzzy RDD?
2. (short answer) List the three RDD causal identification violations discussed and provide an example for each.
3. (short answer) How are sharp RDD and fuzzy RDD similar? How are they different?
4. (short answer) What are the identifying assumptions for sharp RDD and fuzzy RDD?
5. (short answer) How is sharp RDD analogous to 2SLS?
6. (short answer) When fitting the trends on the running variable for an RDD, do you want to fit a flexible or rigid trend? What are the concerns of using the kind of trend you do not want?

Panel Data

1. (short answer) If you are using two-way fixed effects (e.g. year and state), do you need to cluster your standard errors? If so, by which variable(s)? Why?
2. (short answer) What are the two panel caveats discussed in lecture (and in the textbook)? Describe each caveat with an example.
3. (short answer) Describe how computers efficiently estimate fixed effect regressions? What theorem (discussed earlier in the semester) validates this technique?
4. (short answer) Intuitively, what kind of bias do fixed effects remove from regression estimates?

Difference-in-Differences

1. (short answer) Why can it be problematic to estimate an SDO between treatment and control groups in the post-treatment period? What about an SDO for pre- and post-treatment periods for the treatment group? What types of biases are present?
2. (short answer) What is the main identifying assumption for difference-in-differences? Is it directly testable? Why or why not?
3. (short answer) What are the two purposes of producing an event study figure (*hint: one is from the pre-treatment period and the other is from the post*)?
4. (short answer) What is the purpose of estimating a lagged placebo test? Does it provide direct or indirect evidence of what it is used to support? Why or why not?
5. (short answer) In differential timing difference-in-differences, the estimated causal coefficient is modified from the ATT by two components. What are the two components? For each component, what increases their value?
6. (numerical) Using the given 2×2 table of averages, calculate the SDO between treatment and control groups in the post period, calculate the SDO between pre-treatment and post-treatment periods for the treated group, and calculate the ATT.