Name: _____

1. What does the term in parentheses in the following decomposition define?

$$E[Y_i(1) - Y_i(0)||D_i = 1] + (E[Y_i(0)|D_i = 1] - E[Y_i(0)|D_i = 0]) \quad (1)$$

   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

2. How is randomization inference used to test the sharp null hypothesis of no effect for any subject?
   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

3. Demonstrate how to create a schedule of potential outcomes for an experiment using R.
   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

4. Assume that you have a dataset with an outcome variable Y, a treatment variable D, and several pre-treatment covariates $X_1, ..., X_5$. Using R, run a regression using robust standard errors of the outcome on the treatment with and without including covariates.
   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

5. Define a natural experiment and explain the difference between it and a randomized control trial.
   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

6. A researcher runs an experiment to see if sending postcards will increase the number of voters in an upcoming election. Not everyone checks their mail. What assumptions are required to estimate the complier average treatment effect (CATE)?
   A. I have seen this kind of problem before, and I would answer correctly
   B. I have not seen this kind of problem before, but I would answer correctly
   C. I have seen this kind of problem before, but I do not know if I would answer correctly
   D. I have not seen this kind of problem before, and I don't know if I would answer correctly

7. Explain the difference between a sharp regression discontinuity design and a fuzzy regression discontinuity design.

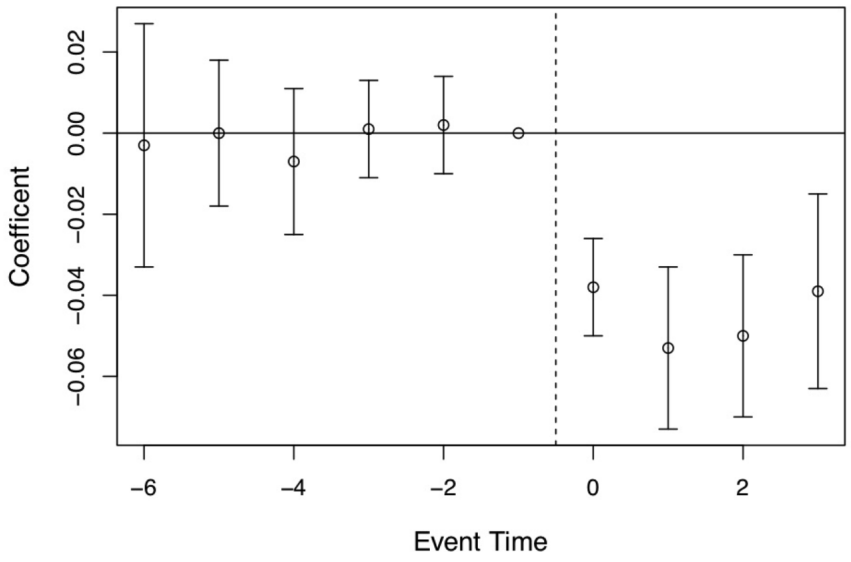
    A. I have seen this kind of problem before, and I would answer correctly

    B. I have not seen this kind of problem before, but I would answer correctly

    C. I have seen this kind of problem before, but I do not know if I would answer correctly

    D. I have not seen this kind of problem before, and I don't know if I would answer correctly

8. A team of researchers (Miller *et al.* 2019) examined the effect of the expansion of Medicaid on population mortality. Explain the purpose of the following visualization and then use R to generate a simulated version of the plot.



    A. I have seen this kind of problem before, and I would answer correctly

    B. I have not seen this kind of problem before, but I would answer correctly

    C. I have seen this kind of problem before, but I do not know if I would answer correctly

    D. I have not seen this kind of problem before, and I don't know if I would answer correctly

9. Assume you have panel data on countries from 1945-2021. Assume that Oski the Bear grants you a treatment variable D and an outcome variable Y to add to your dataset. Run regressions with appropriate standard errors with and without fixed effects.

    A. I have seen this kind of problem before, and I would answer correctly

    B. I have not seen this kind of problem before, but I would answer correctly

    C. I have seen this kind of problem before, but I do not know if I would answer correctly

    D. I have not seen this kind of problem before, and I don't know if I would answer correctly