Name: _____

In-class final, EC607

100 points possible

1   What are your identifying assumptions? (5 questions $\Rightarrow$ 50 points)

Instructions Each of the following questions gives you an identification strategy (*aka*, research design). Your job: Explain which assumptions are necessary for the strategy to consistently estimate the treatment effect. In other words: *What are the identifying assumptions?*

Note You can keep the answers short; a couple sentences or equations should suffice.
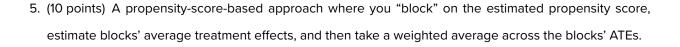
1. (10 points) The "lots of controls" approach (*i.e.*, throwing a bunch of control variables into the regression).

2. (10 points) An RCT where the estimate is the difference in means between the treated and control groups.

3. (10 points) Two-stage least squares.

4. (10 points) A sharp regression discontinuity.

5. (10 points) A propensity-score-based approach where you "block" on the estimated propensity score, estimate blocks' average treatment effects, and then take a weighted average across the blocks' ATEs.

2 Which effect are you identifying? (5 questions $\Rightarrow$ 50 points)

Instructions Each of the following questions describes an estimation approach. Tell me which type of treatment effect the approach estimates (*e.g.*, ATE, ATET, ATEC, ITT, LATE, CATE) and explain your answer with a few short sentences.

Note Do not assume treatment effects are homogeneous unless you are told they are. If you need to make any other assumptions, tell us what you're assuming. ***Important:*** Don't worry about endogeneity here.

6. (10 points) For a set of uninsured individuals, the local government randomly provides 50% of the individuals with free health insurance. The rest remain uninsured. You regress some health index on an indicator for whether the individual received free health insurance. (Assume the health index is available for all uninsured individuals.)

7. (10 points) **_Updating 6:_** Suppose the local government actually had an income threshold at $25,000: everyone below the cutoff automatically received free health insurance; no one above the cutoff received it. Using a flexible regression, you estimate the effect of access to health insurance by comparing health outcomes for individuals just above the program's cutoff to individuals just below the cutoff.

8. (10 points) **_Updating 7:_** Suppose individuals below the cutoff were not automatically enrolled: some eligible people enrolled, and some eligible people did not enroll. No ineligible people enrolled.

9. (10 points) **Continuing from 8:** What if some ineligible people enroll?

10. (10 points) **Taking a step back:** Suppose you still want to estimate the effect of access to health insurance, but that you do not have any of the data described in questions 6–9. Instead, you have administrative health data for all individuals in the population. You match each insured individual to their "closest" match among uninsured individuals (using a lot of demographics). You then estimate the effect of being insured as the average difference between each insured individual and their nearest uninsured match.