

Assignment 12b

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Answer 1

- (a) Using the discussion in Section 21.2, we estimate the treatment effect as $0.5/0.7 \approx 0.71$.
- (b) We can estimate the average treatment effect among the compliers, i.e. those patients whose decision to take the drug can be affected by the offer.

Answer 2

- (a) The pre-treatment measurement is used to compute the encouragement effects, thereby allowing us to perform our instrumental variable analysis using estimated ITT and treatment effects.
- (b) I would set up a model of the form

$$\text{blood pressure}_{\text{post experiment}} \sim \text{drug taken} + \text{blood pressure}_{\text{pre experiment}} + \text{age}.$$

We could also throw in an indicator variable for restricting our pre-experiment data to near the discontinuity.