

Final

A. Short problems

You should allocate eighty minutes of exam time (about ten minutes per problem) to this section.

- (1) Depict graphically (i.e., bid rent curves) the effects of the following changes on city radius and on the division of city land between the central business district (CBD) and the suburban residential district (SRD). Just consider the first-round effect rather than any additional effects (i.e., a partial equilibrium rather than general equilibrium analysis):
 - a) The unit freight cost increases.
 - b) The workweek is lengthened from five days per week to six days per week.
 - c) A new light rail system cuts line-haul time significantly for commuters.

- (2) Consider a situation where for a polluting factory, the cost of polluting (due its being taxed) decreases moving out from the residential area of a city, while its labor costs rise (so total combined cost to the firm first decreases, then increases as it moves away from the residential area boundary). Show the result, using graphs, for each of the following changes, on the optimum location of the factory.
 - a) The unit commuting cost per mile decreases.
 - b) The tax decreases on pollution
 - c) The firm discovers a new method of pollution control that cuts abatement cost in half.

- (3) What is the spatial mismatch hypothesis? What is its relationship to racial discrimination? Can you suggest two policies that would improve outcomes for minority households if it is the case that the spatial mismatch hypothesis is operational?

- (4) Consider an apartment building that does not generate enough rental revenue to cover the landlord's costs.
 - a) Use a graph to show this situation.
 - b) Suppose the local government provides a 50 percent subsidy for operating, maintenance, and repair costs. Show the effects of the subsidy program on your graph. What happens to the optimum quantity of housing services Q ?
 - c) What would be a justification for the local government's offering this subsidy?

- (5) Under the traditional public school system, parents must send their children to the neighborhood school. In recent years, many people have suggested that parents be able to send their children to the public school of their choice, not necessarily the neighborhood school. Suppose this change is implemented. Discuss the effects on the Tiebout shopping and sorting process. Would there be more or less income segregation in neighborhoods? Would there be more or less income segregation in the schools? Explain your reasoning.
- (6) Pick one of the following three ideas suggested by members of the class and discuss its feasibility, both in terms of whether it would improve the particular suburb in which it is implemented, and what the drawbacks might be of the idea.
- a) Construct a segregated bike lane system throughout the suburb.
 - b) Offer tax incentives (reduced property tax) for remodeling/restoring historical and/or abandoned buildings in the suburb.
 - c) Offer tax incentives (reduced property tax) to people who both live and work in the particular suburb.
- (7) The city of Congestopolis is trying to reduce its congestion problem on the main highway into town.
- a) Draw a graph showing the private-trip-cost curve and the social-trip-cost curve and show a case where the current level of demand generates a congestion cost.
 - b) Suppose the city turns one of the three lanes on the highway into a diamond lane, where only carpools and buses can use the lane. Depict graphically a situation in which the diamond lane reduces the congestion cost but does not completely solve the situation.
 - c) The city decides also to impose a congestion tax. Show graphically how much the tax should be, given that the diamond lane is already in existence.
- (8) Describe three ways in which public policy could reduce the likelihood that a rational person would decide to commit a property crime (e.g., burglary). In each case, explain how it affects the person's calculation.

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B. Essay questions

You should allocate eighty minutes of exam time to this section, twenty minutes to answering each question. Your grade on these answers will depend on the coherence and completeness of the answer and on your demonstrating knowledge of the material covered in this course. Use equations, graphs, or diagrams to illustrate your points when helpful.

(1) xxx

(2) xxx

(3) xxx

(4) xxx