Professor Joyce Jacobsen

Economics 316
Urban Economics
October 24, 2005

Midterm Exam

A. Short problems

You should allocate forty minutes of exam time to this section of the exam.

(1) In each of the following cases, give an example and motivate why you chose it.

a) An industry where the firms are likely to be market-oriented.

b) An industry where the firms are likely to be subject to urbanization economies.

c) Two goods, one of which has high demand relative to scale economies of production, and one of which has low demand relative to scale economies of production, and indicate which one has smaller market areas.

d) A localization economy.

(2) Suppose the outputs of hot dog stands and weight loss clinics are complementary. Harry is thinking about moving his hot dog stand from a stand-alone location to a vacant shop next to Sally's weight loss clinic. In making his decision, Harry makes the following assumptions: i) he will keep all of his current customers (200 per week) and attract 25 percent of Sally's current customers; ii) Sally has 100 customers per week; iii) excluding rent, Harry's profit per customer is $1; iv) the weekly rent at the new location is $50 higher than Harry's current rent.

a) If Harry moves, will his profits increase or decrease, and by how much?

b) Suppose that if Harry makes the move, 20 percent of his original customers will switch from their current weight loss clinic to Sally's. If Sally's profit per visit is $2, how much would she be willing to pay Harry to make the move? Will the payment be enough to induce Harry to make the move?

c) What is the point, if any, of this parable for local economic development?

(3) Consider a firm that delivers pizzas daily to its customers. The spatial distribution of customers is as follows: 20 pizzas are delivered to location W, 5 miles west of the city center; 40 pizzas are delivered to the city center; 10 pizzas are delivered to E, one mile east of the city center, and 5 pizzas are delivered to F, three miles east of the city center. Production costs are the same at all locations. Transport costs are constant per mile traveled.

a) Using a graph, show where the firm should locate. Explain your location choice.

b) What if 5 more customers, each ordering one pizza a day, locate at point F?

c) what if it costs twice as much to ship pizzas east as to ship pizzas west?

(4) Consider an apple farm, where the farmer rents the land the farm is on and operates in a perfectly competitive market for apples and for all inputs.

a) Draw a diagram depicting the farm's average variable cost curve, marginal cost curve, and the rent that it pays for its land. Label the price it sells apples at and the quantity of apples sold.

b) The county in which this apple farm (and a few other apple farms) operates starts a policy of free pesticide spraying over all farmland. Show how this policy affects the firm's diagram.

c) Show how your answer to (b) changes if all counties in the nation instituted this policy.

B. Essay questions

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

(1) xx

(2) xx