Chapter 3 Practice Problems

Elements of Microeconomics - Section 4

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Question 1

Stu's Steakhouse and Sandie's Salads are two restaurants which serve salads and steaks. Given 1000 minutes of labor time, they can produce the following amounts of each dish:

Restaurant	Steaks	Salads
Stu's Steakhouse	100	20
Sandie's Salads	200	100

Table 1: Stu vs. Sandie

Part A

What is their cost, in minutes, to produce steak and salads?

Part B

Assume that there is a constant transferability of productive resources from one dish to the other:

1. Draw the production possibility frontiers for the two restaurants.
2. Who has the absolute advantage in producing steaks?
3. Who has the absolute advantage in producing salads?

Part C

Let's think about the opportunity cost of each firm for each dish:

1. What are the slopes of the two PPFs?
2. What is Stu's opportunity cost for producing steaks and salads?
3. What is Sandie's opportunity cost for producing steaks and salads?

Part D

1. Can a firm have an absolute advantage in both goods?
2. Can a firm have a comparative advantage in both goods?
3. What is the relationship between the comparative advantage in good A and good B?

Part E

Since most customers like to order a salad with their steak, Sandie and Stu both want to offer both salads and steaks (not necessarily 1-to-1 since some customers will only want one or the other).

1. If both restaurants spend half their resources on each dish, what is their output?
2. Assume the two businesses can trade. What is one set of productions, and one possible exchange, which would leave them both better off?

Part F

We can think of the price of salads in terms of steaks in the above trade as 1 salad to 3 steaks. Would this trade still be profitable if:

1. The price of 1 salad was 3.5 steaks?
2. The price of 1 salad was 1 steak?
3. The price of 1 salad was 6 steaks?

Bonus

Go back to our starting point from part E, where each restaurant spends half their time producing each plate. Without knowing prices, we can only say that a restaurant is better off if they have more of at least one dish than they did before the change, without having less than of the other. In this context, I want you to think about the "best" change in production. I am going to define this as the production which maximizes *total output*, ie steaks + salads, while making sure we have *at least* the same amount of each dish as before.

Question 2

Joseph can peel a pound of potatoes in 10 minutes and wash a load of dishes in 15. Mary can do both of these tasks twice as fast.

Which person should do more of which task? (Don't worry about specific numbers.)

Question 3

Joseph can peel a pound of potatoes in 10 minutes and wash a load of dishes in 15. Mary can also wash the dishes in 15 minutes, but it takes here only 5 minutes to peel the potatoes.

Part A

1. What is each person's opportunity cost of peeling potatoes?
2. Who has an absolute advantage in washing the dishes?
3. Who has a comparative advantage in washing the dishes?
4. If the two workers try and split up the tasks in an advantageous way, who will do more of which job?

Part B

Think about the price of peeling potatoes in terms of washing dishes. What is the maximum price at which a trade could leave both workers better off? What is the minimum price?

Bonus

Now think about the price of washing dishes in terms of peeling potatoes. What is the range of possible prices? What is the relationship between the range of possible prices in this instance, vs. what we derived above?