Economics 3550
Intermediate Microeconomics
Professor Rous
Mid-Term Exam 1
October 4, 2004

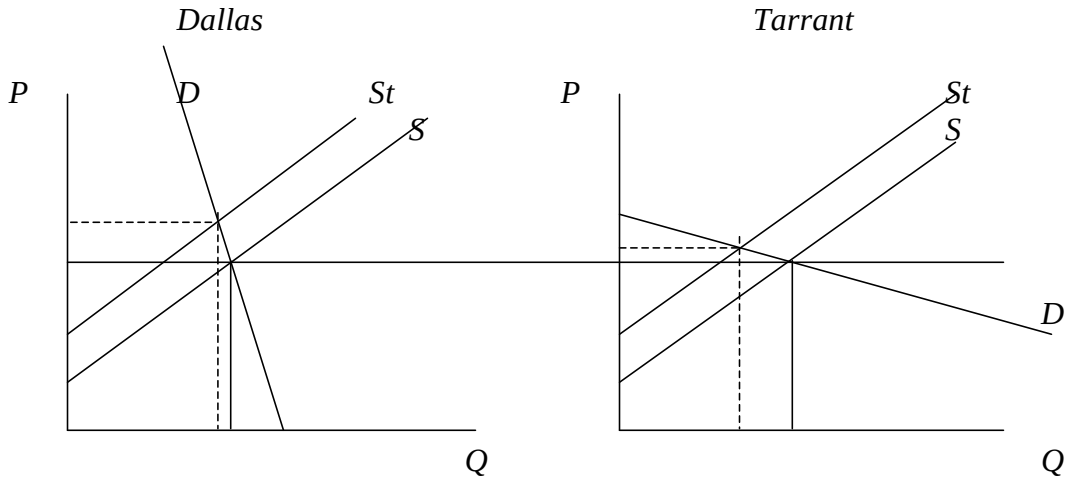
Name_____
Clearly label all graphs for full credit and please write legibly; I cannot grade what I cannot read.

The number of points each question is worth is noted in parentheses.

Multiple Choice and Short Answer

1. (10) 10,000 six-packs of beer are sold in Dallas county and in Tarrant County per month. The supply curves for beer in each county are identical. To discourage drinking, both counties institute a $1 per six-pack excise tax on beer. As a result, the price of beer rises by $.75 per six pack in Dallas County and by $.40 per six pack in Tarrant County.

True/False and explain. In Dallas County, the tax is more effective in lowering consumption of beer.



Given the same supply curves and initial prices in each county, the only way the price could rise more in Dallas County is if demand is more inelastic there as compared to Tarrant County. With a more inelastic demand, it will be harder to get consumers to buy less beer. With a identical shift in supply in each county, even with a price that has risen more, consumers will still buy more beer in Dallas County.

2. Demand for espresso in Seattle can be illustrated by the following demand curve:

$$P = 10-.2Q$$

Supply can be illustrated by the following supply curve:

$$P = 1+.05Q$$

a. (8) Graph supply and demand. What is the equilibrium price and quantity of espresso.

Set: 10-.2Q = 1+.05Q
9 = .25Q
Q = 36

Equilibrium Q is 36 and P is $2.80.

b. (7) To raise money for early childhood learning programs, the city has imposed a $1 excise tax on espresso.[1] Illustrate the tax on your graph. What will be the new market price and quantity for espresso? How much of the economic incidence will fall on buyers and how much on sellers?

Excise tax, so supply becomes: P-1 = 1 + .05Q

Set P=P, or: 10 - .2Q = 2 + .05Q
Equilibrium Q = 32 and P = $3.60

Consumers pay $.80 of the tax ($25.60)
Producers pay $.20 of the tax ($6.40).

[1] They really tried to add a $.10 tax on espresso drinks in Seattle, but it proved so unpopular that it never came to pass.

3. (10) Howard and Norval are roommates. It takes Howard .5 hours to cook each meal and 1 hour to do a load of laundry. It takes Norval 1 hour to cook a meal and 3 hours to do a load of laundry. They each make three meals and wash three loads of laundry per day. Because Howard is faster at each task, they are convinced there is no possible gain from trade. Are they right? If not, how many hours could they save if they specialized and traded?

For Norval, the opportunity cost of cooking a meal is 1/3 a load of laundry.
For Norval, the opportunity cost of a load of laundry is 3 meals.

For Howard, the opportunity cost of cooking a meal is 1/2 a load of laundry.
For Howard, the opportunity cost of a load of laundry is 2 meals.

Norval is the low cost producer of meals and Howard is the low cost producer of laundry.

Norval can cook all 6 meals in 6 hours (he now spends 12 hours doing all his housework).

Howard can wash all 6 loads of laundry in 6 hours (he now spends 4.5 hours doing all his housework).

In total , they could save 4.5 hours total (from 16.5 hours to 12. Howard would not gain from this.

This was as far as a correct answer would have to go.

FYI:
If they instead traded 2.5 meals for a load of laundry, they could both benefit.

For example, if Norval cooked 5.5 meals and 2 load of laundry and Howard made 1/2 a meal and washed 4 loads of laundry, Norval would spend 11.5 hours and Howard would spend 4.25 hours working for a total of 15.75 hours.

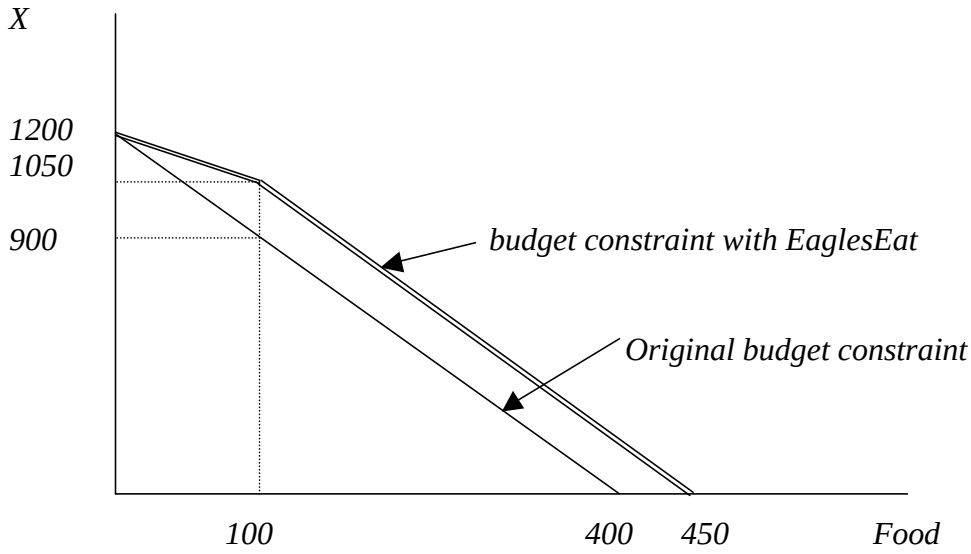
I did not intend for the situation to get this complicated.

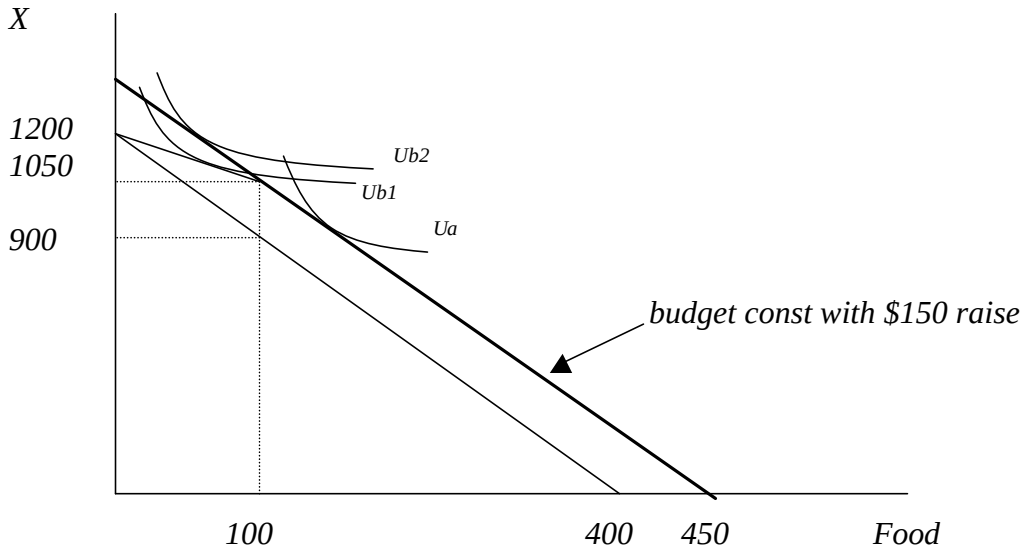
4. (7) Maki is a potter who can make 2 decorative teapots per day. She can sell as many teapots as she can produce, earning a net income of $24 per teapot. Every Wednesday, instead of making teapots, she spends $12 on gasoline delivering teapots to the stores that carry her work. When would Maki and her customers benefit from her hiring a middleman to do the deliveries (*hint*: what would the middleman's cost of delivery need to be to make hiring him profitable for Maki)?

Right now, her Wednesdays cost her $60 (gas plus opportunity cost of not making teapots. If a middleman can cost her less than $60, she should hire one.

5. Instead of pay raises this year, UNT has just begun "EaglesEat," a program to help poor professors keep their families from going hungry at night. Assume the price of food, *f*, is $3 per unit and the price of other goods, *x*, is $1 per unit. For a typical professor earning $1,200 per month, the university will give the professors cards that will allow them to buy food at half price, until they buy 100 units of food.

a. (6) With food on the horizontal axis, draw the original budget constraint.
b. (6) Add the budget line for a professor benefiting from the EaglesEat program.
c. (8) Say the program costs the University $150 per professor. Using indifference curves, demonstrate which professors would be better off with $150 pay raise and which would not.





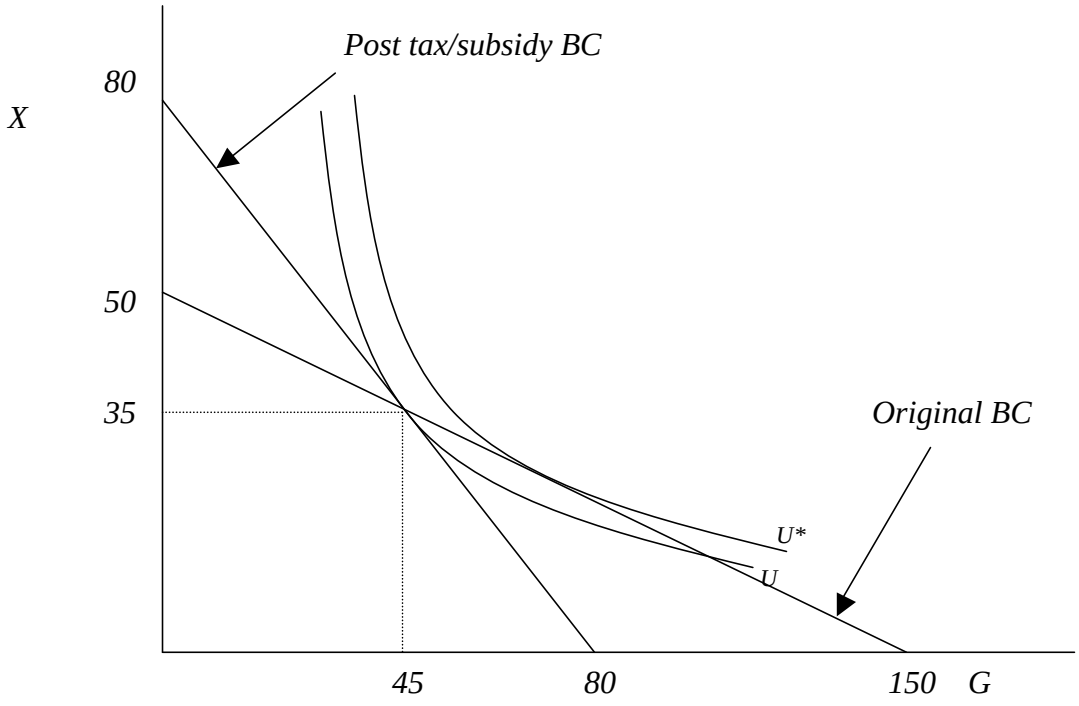
Professors with preferences described with Ua are equally well off with Eagles eat or the $150.
Professors with preferences described with Ub1 and Ub2 can move from Ub1 to Ub2 with a raise and would be better off with the raise.

6. (10) Given Frances' current consumption of wine and bread, her MRS (i.e. Marginal Value) of wine is 3 loaves of bread. The market price of bread is $4 and the market price of wine is $8. Can Frances be made better off by consuming a different quantity of bread and wine than she is consuming now? Please explain (a graph may help, but isn't necessary).

With a MRS of 3 and a Pw/Pb = 2/1, she cannot be at a tangency. She is willing to give up 3 loaves of bread for one bottle of wine but she only has to give up 2 loaves of bread for one bottle of wine. She should consume more wine and less bread.

7. (15) Spencer has an income of $150. Previously, the price of gas, Pg was $1 and the price of other goods, Px, was $3.

To try to get people to consume less gasoline, the government has begun a tax policy that includes excise tax (driving the price of gasoline to $3) and a tax credit of $90 to offset the higher price. That is, the tax credit makes Spencer's income effectively $240). After the tax policy was instituted, Spencer chose a bundle with 45 gallons of gasoline and 35 units of x. Putting gasoline on the horizontal axis, graph the situation and explain whether Spencer is better off after the tax policy or before the tax policy was instituted.



After the policy, Spencer chooses G = 45, X = 35. With indifference curve U tangent to the budget constraint, we can see that before the policy, he could have consumed more G and less X and been on the higher indifference curve U. Therefore, he was better off before the policy.*

8. (3) The income-consumption curve is to the Engel Curve what the price-consumption curve is to the __*Demand Curve*_____.

9. (10) “Yes, it may look like very few people benefit from the Senator Bob Enweave Bridge across Lake Heretanoware because almost no one drives across it. However, think of all the construction workers who can now afford new cloths for their families and the clothing stores that now have more business. This bridge is good for everyone in the economy.” - Sen. Bob Enweave

Explain how Hazlitt would respond to the above quote.