Economics 3550
Intermediate Microeconomics
Professor Rous
Mid-Term Exam 1
September 24, 2003

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. (6) Looking in the refrigerator for dinner ideas, Gina spots two containers of leftovers. The first one contains pasta she made for dinner one evening and the second container contains part of a steak dinner from Del Frisco's that had cost her $30.00 three days earlier. Given their age, the contents of both containers have to be thrown out after tonight's dinner and she can only eat one. She really would prefer to eat the pasta but the steak was much more expensive.

   Which should she eat and why?

   Eat the pasta, the $30 spent for the steak is a sunk cost and should be ignored.

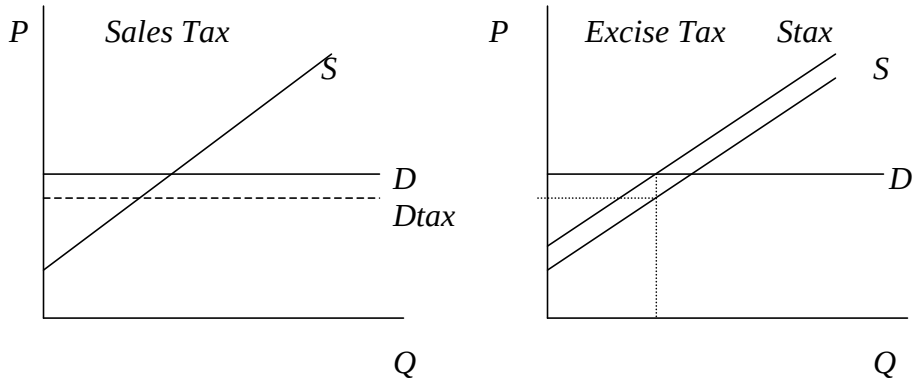
2. (6) Congress has recently debated raising fuel efficiency standards for cars and especially trucks like SUVs.
   True/False/It depends: Raising the gas mileage of SUVs by 10% would decrease overall fuel consumption. Please explain your reasoning.

It depends. Better fuel efficiency means it is cheaper to drive. Therefore, people will drive more. Whether this will lead to lower fuel consumption or higher fuel consumption is determined by the size of the increase in miles driven. If fuel efficiency rises 10% and people drive 5% more, then overall fuel consumption will fall. If people drive 10% more, fuel consumption will not change. If people drive 12% more, overall fuel consumption will rise.

3. (7) A frost in the mountains of Columbia has severely damaged the coffee harvest. True/False/It depends. The resulting price increase will be short-lived however since the higher price will cause people to drink more tea and demand for coffee will fall. Please explain your reasoning (a graph might help your answer).

The frost will cause supply to shift to the left, causing price to rise and equilibrium quantity to fall. Demand will not be affected.
Yes, people will consume more tea as they substitute away from coffee, and this will cause the equilibrium price and quantity of tea to rise. However, the rise in the price of tea will not cause a secondary demand increase for coffee. The original change in equilibrium P and Q for coffee already includes any resulting changes in the tea market.

4. (6) A new tax is being considered by the legislature for a good where demand is perfectly elastic and supply is upward sloping. To have the minimum impact on consumers, the legislature should
   a. use a sales tax.
   b. use an excise tax.
   c. use either one since consumers will pay the entire economic incidence with either tax.
   d. use either one since producers will pay the entire economic incidence with either tax.



Whether a sales tax or excise tax is enacted, the price to consumers will not change but the price to producers will fall by the amount of the tax. Producers pay the entire tax either way.

5. (6) In 2002, the price of a gallon of milk was $2.00 and a six pack of beer was $6. In 2003, the price of a gallon of milk was $3.00 and the price of a six pack of beer was $8.00. Which of the following is true:
   a. The relative price of beer increased and the relative price of milk decreased.
   b. The relative price of beer increased and the relative price of milk increased.
   c. The absolute price of milk increased and the relative price of milk decreased.
   d. The absolute price of milk increased and the relative price of milk increased.

In 2002, one milk had an absolute price of $2 and in 2003 it had a price of $3.
So, absolutely, milk got more expensive.
In 2002, 1 milk cost 1/3=.333 beer and in 2003, 1 milk cost .375 beer.
In 2002, 1 beer cost 3 milk and in 2003, 1 beer cost 2.67 milk.
So, relatively, milk got more expensive.

6. (7) Jill can paint a room in 6 hours and change the oil on a car in 2 hours. Phil can paint a room in 8 hours and change the oil on a can in 4 hours.
True/False/It depends: Jill is a more efficient painter than Phil. Please explain your reasoning.

Painting a room costs Jill 3 oil changes while painting a room costs Phil only 2 oil changes. He is therefore the low cost producer of painting rooms. He has the comparative advantage at painting while she has a comparative advantage at changing the oil on a car.

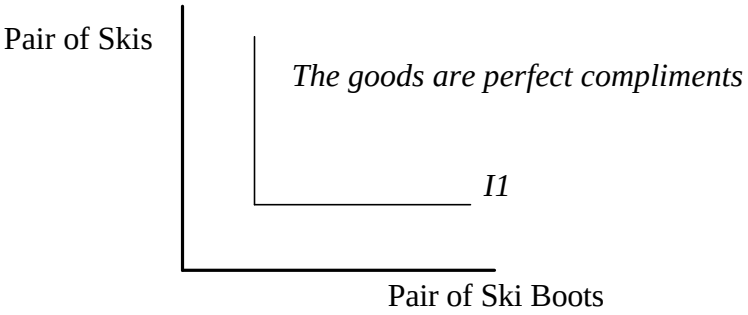
7. (6) For years we have heard that costs will be lower if the middleman can be eliminated, yet the middleman never goes away. Why?
   a. Laws generally require a middleman to act as an intermediary between manufacturers and consumers.
   b. The cost of the middleman can simply be passed on to consumers.
   c. The use of middlemen actually results in lowering cost.
   d. Producers are unable to perform the middleman's services on their own.

The only reason middlemen are used is to lower the total cost of getting goods to consumers. Middlemen have a comparative advantage at doing what they do.

8. (6) An indifference curve shows us:
   a. how income can be used to buy one bundle of goods at different prices
   b. an individual's consumption possibilities.
   c. trade-offs that a consumer is willing to make which do not make them better or worse off.
   d. which bundle of goods maximizes utility.

An individual gets the same utility from each bundle along an indifference curve. By moving along the curve, we can see how much an individual is willing to give up of one good to get a little more of the other good, while remaining indifferent.

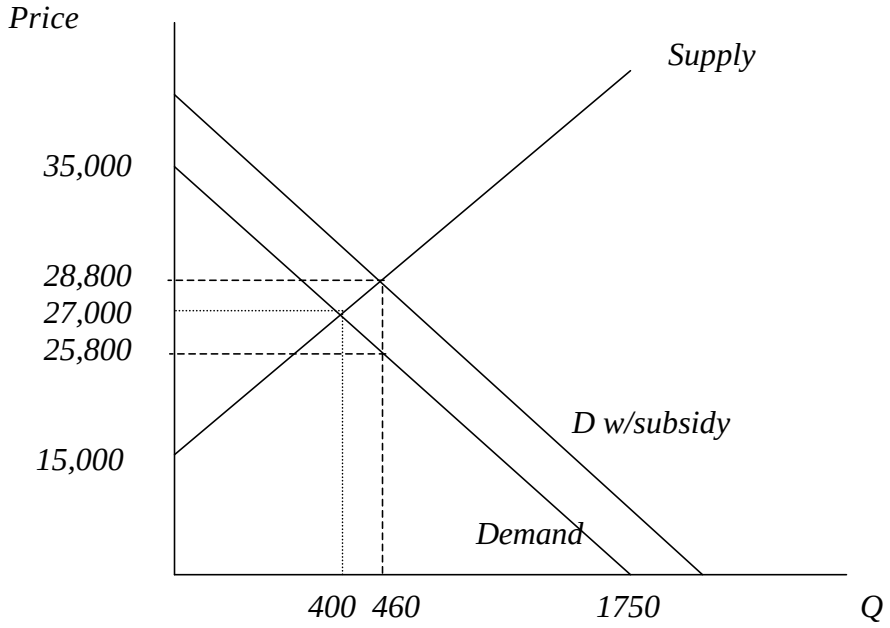
9. (6) Below, draw an indifference curve for pairs of skis and pairs of ski boots. Note that a pair of skis is useless without ski boots (and vice-versa).



Problem Solving

10.(14) Let the supply and demand for Hybrid vehicles in Texas be the following:
Supply: P = 15,000 + 30Q
Demand: P = 35,000 – 20Q

Because hybrid vehicles (which contain both a small gasoline engine and an electric battery powered motor) do not use much gasoline and produce little pollution, state legislators are debating enacting a new $3000 subsidy to be paid to new buyers of the vehicles. You have been hired to analyze the situation to determine what effect the subsidy will have on the market (price sellers get, price consumers pay and the quantity sold).
Graph the situation described above and label the original quantity and price and the new equilibrium quantity and price for sellers and buyers.



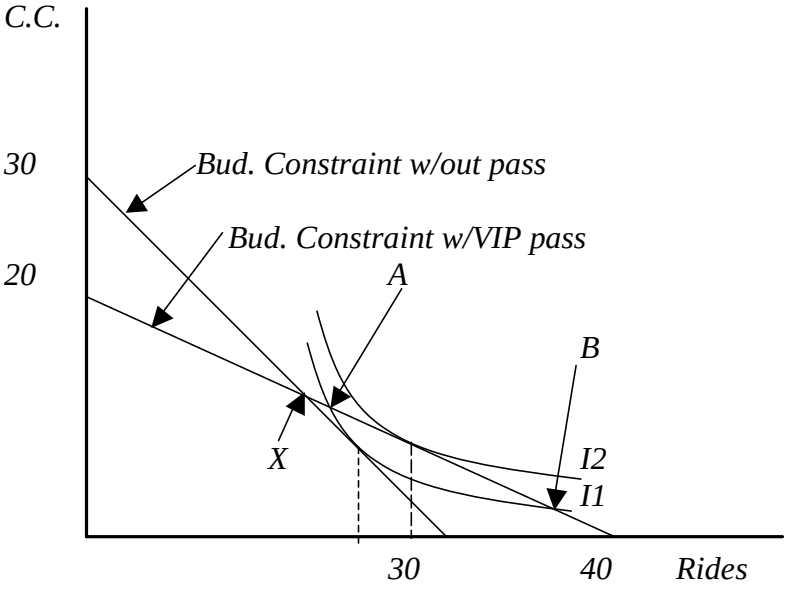
With the subsidy paid to consumers (the opposite of a tax, like in the hamburger question on the homework), consumers will be willing to pay $3000 more per car. This causes demand to rise (to P = 38,000 – 20Q) and the new market equilibrium price to rise to $28,800. But one they get their $3,000 from the government, consumers only pay $25,800 for the car.

11. At the Denton County Fair, admission has always been free, the rides have always had a price of $1 per ride and the only other good you can buy is cotton candy for $1 per bag. This year patrons can buy a VIP pass for $10. With the VIP pass, you not only get into the fair, but rides only cost $.50.

a. (8) Assuming Donald brings $30 to the fair, and putting Rides on the horizontal axis and cotton candy on the vertical axis, on the same graph below, draw his budget constraints both if he buys the VIP pass and if he does not (hint: buying the pass affects his income once he enters the fair).

b. (6) Using the graph from part a, (and adding indifference curves) is it possible to determine whether Donald will definitely go on more rides if he chooses to buy the pass? Explain your answer.

c. (6) If Donald decides to buy the pass, what will be his MRS (i.e. marginal value of a ride) at his optimal bundle?



The $10 fee for the pass causes the budget constrain with the pass to have an y-intercept at C.C. = 20.

For Donald to be better off by buying the pass (and we have to assume he would only buy it if it made him better off), his optimal bundle without the pass would have to be on the budget constraint w/out the pass and to the right of point X. With the pass, he could take more rides or less depending on the location of the optimal bundle with the pass. The new optimal bundle could be anywhere between point A and point B. Most likely, he would take more rides.

C. The MRS if he buys the pass must equal Pr/Pcc = 1/2

12.(10)“As destructive as the invasion was to Iraq, the silver lining to this dark cloud is that once the oil revenues start flowing in, the rebuilding process will be an economic boon to the Iraqi people. Just think of how better off the people will be when they can get jobs rebuilding the country’s infrastructure.”

Based on your reading of Hazlitt, please comment on the above statement.

A good answer would indicate that rebuilding requires using resources that could have been used to build new things that people wanted. Now they have to expend resources just to rebuild infrastructure they already had.

6. (6) Pat and Chris are roommates. It takes Pat 4 hours to do a load of laundry and 2 hours to make a meal. It takes Chris 1 hour to do a load of laundry and 1 hour to make a meal.
   a. Pat has a comparative advantage in doing laundry and Chris has a comparative advantage in cooking.
   b. Pat has a comparative advantage in cooking and Chris has a comparative advantage in doing laundry.
   c. Pat has a comparative advantage in doing laundry and cooking.
   d. Chris has a comparative advantage in doing laundry and cooking.

12. (8) The Mayor of Denton has proposed a new sales tax on land sold in the town in order to pay for new school construction. Since the amount of land in Denton is fixed, the supply of land is vertical. Landowners have complained that the tax will drive up the price of land in the town and people will stop moving to Denton. Are they right? Use supply and demand analysis to determine the effect of the tax. Why do you think landowners are really against the tax?

11. (8) Suppose you have $10 in your pocket and you go to buy doughnuts and milk. A pint of milk costs $1 and doughnuts are $.50 each for the first dozen (12) and $.25 each for any doughnuts after that.
Draw your budget constraint with doughnuts on the horizontal axis. Please label all relevant parts of the graph.

12. (8) Charley and Marla each consume 3 pizzas and 3 hamburgers per week. Charley lives in Texas where the price of a pizza is $5 and the price of a hamburger is $3. Marla lives in California where the price of a pizza is $4 and the price of a hamburger is $4.

True/False/It depends? Charley and Marla have the same preferences. Please explain your reasoning.