

Introduction to Microeconomics  
Answers Exam 1

October 21, 2008

1. Use the following table to answer this question:

	Midwest	New England
Corn	1	5
Dresser	6	10

- (a) (10 points) In the Midwest, they can produce 1 ton of corn for \$1, and one dresser for \$6. In New England, it costs \$10 to produce a dresser, and it costs \$5 to produce 1 ton of corn. Who should produce what? Briefly explain your answer and show your work.

**Answer:** The Midwest should produce corn and New England should produce dressers because the opportunity cost of corn for the Midwest is  $\frac{1}{6}$  and the opportunity cost of corn for New England is  $\frac{1}{2}$ . The Midwest has a comparative advantage in corn.

- (b) (10 points) Is the allocation of production you determined above Pareto efficient? How do you know?

**Answer:** The allocation is Pareto efficient because they specialize in producing the good they have a comparative advantage in. No other method of production would yield more output.

2. Use the following table when answering this question:

P	$Q_d$	$Q_s$
1	10	1
2	8	2
3	6	3
4	5	4
5	2	5

- (a) (10 points) Graph the supply and demand curves from the table given.

**Answer:** Standard supply and demand graph that intersects at price=4 and quantity=4, and each curve goes through the points in the table.

(b) (10 points) What is the equilibrium price and quantity?

**Answer:** price=4, quantity=4

(c) (10 points) If a price floor of \$5 were imposed on this market, would there be a surplus, a shortage, or would the market be unaffected? And, if the market is affected, by how much?

**Answer:** Surplus of 3.

(d) (5 points) Calculate the price elasticity of demand between \$3 and \$4 using the following formula:

**Answer:**  $\frac{7}{5}$

(e) (10 points) Based on this calculation, do you have enough information to say whether demand for this produce is elastic or inelastic overall?

**Answer:** No, you do not. The calculation only tells you that demand is elastic between \$3 and \$4. But, elasticity varies along the demand curve, so even though one point is elastic, the overall demand curve may be inelastic.

(f) (5 points) If the market price were to increase from \$3 to \$4, would the firm's revenue increase, decrease, or stay the same? How do you know?

**Answer:** It would decrease because demand is elastic at that point.

(g) (10 points) What is the new equilibrium price if everyone's income increases such that at a price of \$4 quantity demanded is 7?

**Answer:** The new price is 5. You get this by adding 3 to quantity demanded at each price, and finding the new equilibrium.

(h) (5 points) Draw the new demand curve.

**Answer:** Curve shifts to the right, intersects at a price of 5 and a quantity of 5.

(i) (5 points) Is the price floor at \$5 still effective?

**Answer:** No, because it is no longer above the equilibrium price.

3. (10 points) List and explain the three main assumptions of neoclassical microeconomics.

**Answer:**

- (a) Full Rationality: Everyone has and properly uses all available and necessary information.
- (b) Self-Regarding Preferences: People only care about their own outcomes, no one else's.
- (c) Prices carry all relevant information: Everything we need to know about what to buy, etc... is transmitted by the price of the good.

4. (10 points) Give an example of an action that has positive externalities. Explain why you believe it has positive externalities. In neoclassical microeconomics, would the price of this action be too high or too low? Why?

**Answer:** Examples: education, recycling, mowing lawn, obeying the speed limit. Any action that benefits people not directly involved in the transaction. The “price” of a good that has positive externalities is always too high.

5. This is a multipart question.

- (a) (10 points) Apples cost \$2 a pound, and oranges cost \$3 per pound. Currently, the marginal utility of consumption for apples is 2 for oranges it is 1. Are you maximizing utility? If not, what must you do in order to maximize utility? How do you know?

**Answer:** No, you are not maximizing utility. Currently apples are at  $\frac{2}{2}$  and oranges are at  $\frac{1}{3}$ . Must consume more apples to bring down marginal utility, and less oranges.

- (b) (10 points) Draw the budget line (budget constraint) and indifference curve of a consumer maximizing utility.

**Answer:** See the appendix to chapter 5.

- (c) (10 points) Why must the graph look like this? Explain the shape of the indifference curve and budget line, and their placement of the graph.

**Answer:** The budget constraint is downward sloping because we have a fixed income, and must make tradeoffs between what we purchase. The indifference curve is downward sloping because we like more of both goods, thus as long as the quantity of one good increases when the other decreases, we are just as happy. It bows to the origin because of decreasing marginal utility. When we have a lot of a particular good, we don't want more of it. So, we are willing to give up a lot of the good we have a lot of in order to get just a little bit of the other good.