

SAMPLE FINAL

1. Medical doctors in the USA earn very high incomes compared to some other countries such as Canada. Label each of the following with **N** for **NORMATIVE**, or **P** for **POSITIVE**. (6)

High doctor salaries in the USA are a result of the monopolistic practices of the American Medical Association. _____ **P** _____

The Canadian government has created a wretched, socialized system of health care. _____ **N** _____

US doctors earn more because they have longer training than their Canadian counterparts. _____ **P** _____

US doctors earn more because the US health system is more efficient than the socialized Canadian system. _____ **P** _____

High pay for doctors in the US attracts people with higher IQs into medicine than in Canada. _____ **P** _____

Doctors have a long, difficult training and they deserve to be well compensated. _____ **N** _____

2. Airlines engage in extensive price discrimination. Give five examples of these practices. (5)

1. **Discounts for children**
2. **Discounts for seats purchased long in advance**
3. **Discounts for seats sold as part of tour packages**
4. **Discounts for people on a specific flight when their total route has more competition.**
5. **Discounts for frequent flyers**

3. Suppose that a monopolist has a total cost (LTC) of $15 + 4Q$. Suppose the demand curve is $P = 20 - Q$.

(a) If the monopolist can charge only one price calculate the profit maximizing price and quantity, and economic profits (3)

Set $MR = MC$, Profits = Total Revenue - Total Cost

Price \$12

Quantity 8

Profits \$49

(b) Suppose the monopolist can PERFECTLY PRICE DISCRIMINATE. What are his profits now? (3)

Output will be where $P = MC$, Profits = Area under demand curve - TC

Profits \$113

(c) Suppose the government regulates the monopolist by insisting that economic profits be 0. What prices could the monopolist choose to satisfy the regulator? (3)

Set $P = LAC$

Prices \$5, \$19

(d) What would the social gain from the regulation be in the first period it was applied (assuming the monopolist chose the larger output)? (3)

Gain = total surplus (Q = 15) - total surplus (Q=8)

= 112.5 - 81

Gain 31.5

(e) Why in practice would the gains be smaller over time? (2)

With average cost regulation monopolist has reduced incentives to reduce costs

(f) How can regulation in such industries as power generation, local electricity service, water and other utilities be done so as to ensure 0 economic profits, but also the maximal possible gains in the production efficiency of the firms over time? (3)

Prices have to be set to the average costs of comparable firms, not the firm being regulated

4. Suppose the wedding dress industry is a **perfectly competitive** constant cost industry. Suppose also that market demand for wedding dresses is described by $Q = 10,000 - 10P$. Suppose individual firms have cost functions of $LTC = 20,000 + 100q + 2q^2$ ($LTC = 0$ if $q = 0$) (so that LMC is $100 + 4q$).

(a) Calculate price, firm output, market output, and the numbers of firms in the long run in this industry? (8)

In the long run, $LAC = LMC$, which determines P^* and q^*

Market output comes from $Q = 10,000 - 10P$

Price = \$500
 Firm Output = 100
 Market Output = 5,000
 Number of firms = 50

(b) What is the equation of the long run supply curve in this industry? (2)

$P = \$500$ (horizontal)

(c) What is consumer surplus and producer surplus in the long run? (4)

Since supply curve horizontal, no producer surplus

Consumer Surplus \$1.25 m

Producer Surplus \$0

5. In some countries, such as Iran, Israel and South Africa, paying for human organs is not illegal or the law against this is poorly enforced. There thus exists an international market in kidneys from living donors, with the average price \$6,000.

Suppose that the market demand for kidneys is described by $P = 30 - Q$, where Q is the number of transplants per year, and P is the amount recipients are willing to pay, in \$000. The supply of kidneys by living donors as a function of price is described by

$$Q = -6 + (P/2)$$

- (a) On the diagram below draw the demand and supply curves for kidneys, labeling the axes and showing the values where the curves intersect the axes. Show also the market price and quantity. (4)

Demand curve intersects axes at $P = 30$ and $Q = 30$. Supply curve is $P = 12 + 2Q$. This intersects the vertical axis at $P = 12$.

$$\text{Supply} = \text{demand} \Rightarrow 30 - Q = 12 + 2Q \Rightarrow Q^* = 6, P^* = \$24 \text{ (thousand dollars)}$$

- (b) What would be the annual cost to society, measured in \$, of a ban on buying kidneys from living donors? (2)

$$\text{Cost} = CS + PS = 1000 \times 6 \times (30 - 12) / 2 = \$54,000$$

- (c) You are asked to make an argument in favor of allowing this trade. Based on the material we have discussed in this class, what arguments would you make? (2)

Both parties to any trade better off than they would be without the trade. With a ban on purchases there will be no supply, except from relatives or friends of those needing kidneys.

- (d) Explain why those who get kidneys under the system allowing trades need not be those who value the kidneys most in a “psychic” sense. (2)

Money demand is crucially dependent on wealth and income. It does not measure the scale of need in terms of how sick people are, or how limited they are by their condition.

- (e) Suppose in an attempt to aid poor people who need kidney donations the state offers a subsidy of \$6,000 to everyone who needs to buy a kidney. What is the new market price and quantity transacted in the live donor kidney market? (4)

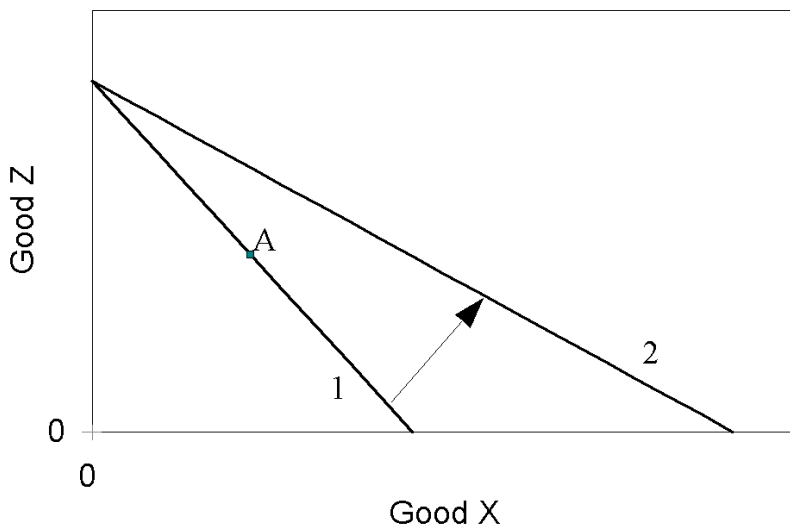
The new demand curve (in \$000) is $P = 36 - Q$

Now $Q^* = 8, P^* = \$28,000$

- (f) Calculate the deadweight cost of this subsidy? (2)

Deadweight cost = $(1/2) \times \Delta Q \times 6,000 = \$6,000$

6.



- (a) The figure above shows two budget constraints for a consumer choosing between goods X and Z. The consumer initially consumes at point A. What is the change that has caused a move from constraint 1 to constraint 2? (2)

 Price of Good X declines

- (b) The effect of the change from budget constraint 1 to budget constraint 2 is (circle the correct answer). (2)

The consumer's real income always increases.

The consumer's real income generally increases, but not always.

The consumer's real income falls.

The consumer's real income sometimes falls.

The consumer's real income stays the same.

(c) Suppose **good Z** (on the vertical axis) is an **inferior good**, and the consumer consumes some of this good at point A. What happens to the quantity of Z consumed as a result of the change in the budget constraint from 1 to 2. (circle the correct answer) (2)

It always falls.

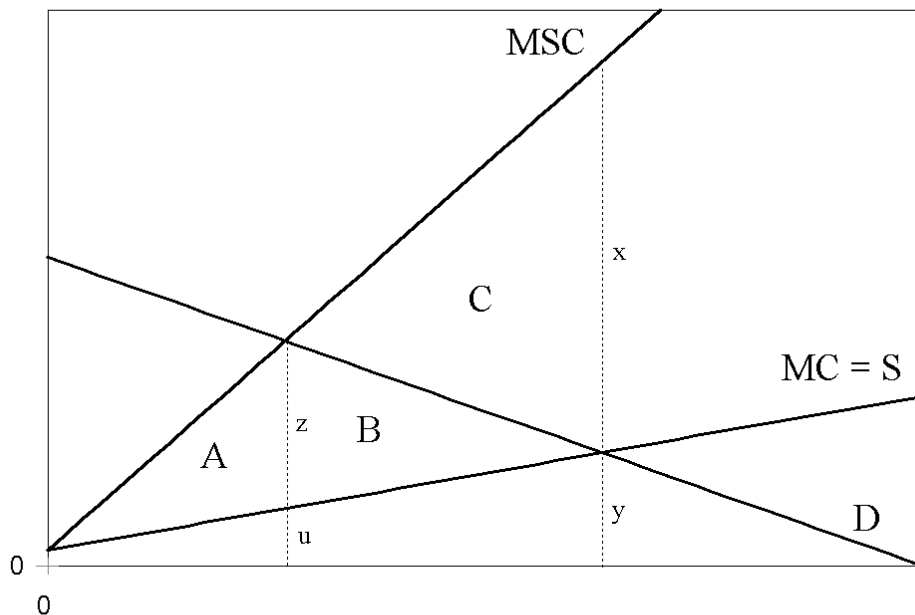
It always increases.

It increases if the income effect is greater than the substitution effect.

It falls if the income effect is greater than the substitution effect.

It sometimes increases, sometimes falls.

7.



The figure shows the private and social marginal costs (in \$) for driving on a congested highway segment, as well as the demand curve. Let N be the number of cars using the road each hour, and T the time cost, measured in \$, per driver.

(a) Suppose the private MC of using the segment is given by N , the number of cars using it, and the social marginal cost SMC is $2N$. Suppose also demand for the segment is described by $N = 24 - T$, where T is the dollar value of the time spent.

What is the free market outcome, in terms of number of cars per hour and the time cost for each driver in \$? (4)

Free market outcome: $P = \text{private MC} \Rightarrow T = 24 - N = N \Rightarrow N^* = 12, T = \12

(b) To get an efficient use of the highway the government should levy a **tax** of what amount (circle the correct answer) (2)

x **z** x+y z+u x-y z-u

(c) Calculate the size of that tax in \$. (2)

Efficient outcome: $P = \text{social MC} \Rightarrow T = 24 - N = 2N \Rightarrow N^{} = 8$**

At $N^{} = 8$, the private MC = \$8, but the social MC = \$16. To drive up the private costs to this level the tax needs to be \$8.**

(d) At the free market outcome, without a congestion tax, what is the dollar cost of the **negative externality** the last driver to use the road imposes on the other drivers? (circle the correct answer) (2)

x z x+y z+u x-y z-u

(e) Calculate the size of the cost in part (d) in \$. (2)

External cost = $N^* = \$12$

(f) If no tax is levied the deadweight loss will be given by? (circle the correct answer) (2)

Area A Area B **Area C** Area A+B+C Area B+C Area A+B

(g) What is the size of the deadweight loss without the tax? (2)

$$\text{Deadweight loss} = (1/2) \times 12 \times 4 = \$24$$

THE END