经济学原理 I（2011 年秋季学期）
期中考试 2（A 卷答案）
（2011/11/30）

注意：请将所有题目的答案写在答题册上，写在本试题纸上一律无效。

一、判断题（判断并简要说明理由，必要时可以用图形。每题4分，共24分）

1. 春节期间倒卖火车票导致火车票短缺，损害了效率和公平。

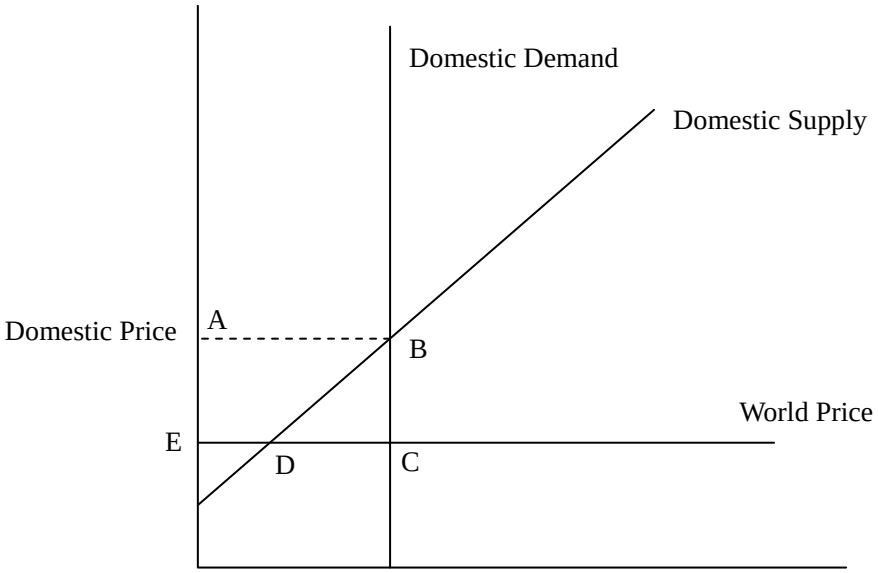
错误（1 分）。火车票短缺是由于春节期间车站规定价格（价格上限）下供小于求，从而引发倒票的套利行为。实际上，倒票者使得火车票价格回到市场均衡价格，反而有利于消除短缺（2 分）。这一行为有可能促进了效率（使得出价高的买者得到票，从而改进了交换效率）（0.5 分）。虽然票贩子获利有可能带来不公平，但没有倒票者时也并不能保证穷人一定买到票，即使买到票也需要付出排队等成本，因此倒票是否损害公平也很难说。（0.5 分）

2. 在美国销售的耐克鞋很多是在中国生产的，制造商向中国工人支付的工资比美国工人低得多。这一做法同时损害了中国和美国的整体利益，因此不论从哪个国家的利益着想，都应该禁止耐克公司在中国开厂。

错误（1 分）。作为耐克鞋的出口方，中国的企业和工人从中受益，而美国耐克鞋的生产工人则从中受损。（1 分）与此同时，中国的耐克鞋购买者受损（相对于耐克鞋不出口，但相对于耐克鞋由美国工人生产则可能受益），美国的消费者和耐克鞋制造商受益（1 分）。无论对于耐克鞋的出口国（中国）和进口国（美国）而言整体上都是受益。从两国整体利益考虑不应该禁止耐克在中国开厂。（1 分）

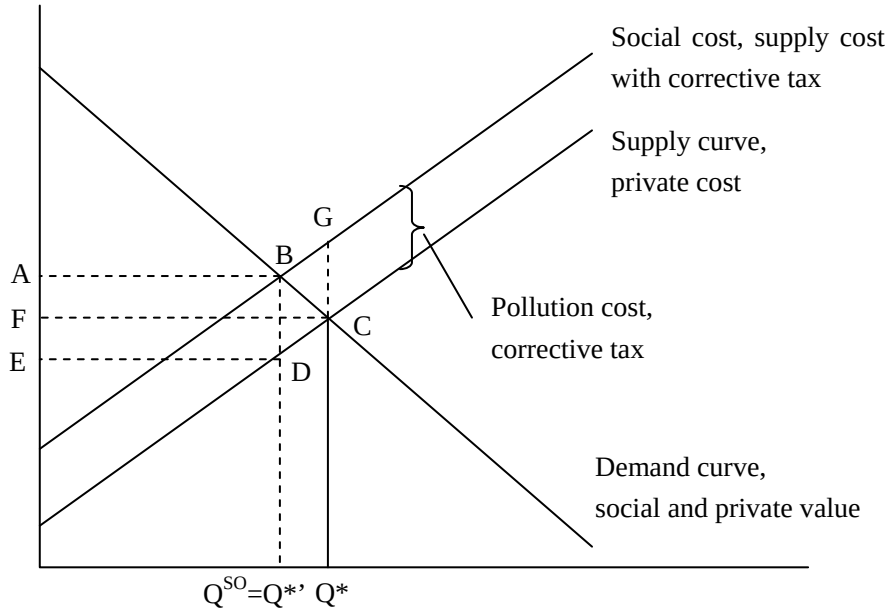
3. Consider a country that imports a good from abroad. If demand is perfectly inelastic, consumers do not benefit from trade and there are no gains from trade for this country. (Hint: Use graph.)

False(1 point). As the graph below shows, consumers benefit from trade by area ABCE. The country's gains from trade are area BCD. (3 points)



4. A proper corrective tax (or Pigovian tax) on a market with negative externality reduces the social welfare (or cause deadweight loss) since the reduction in consumer and producer surplus exceeds the revenue raised by the government. (Use a graph).

False(1 point). The graph below shows the welfare effect of corrective tax. Consumers' surplus reduces by area ABCF. Producers' surplus reduces by area FCDE. The government's tax revenue is ABDE. So area BCD is the welfare loss within the market. However, the bystanders (those who suffered from negative externality) gain from the tax by area BDCG. As the whole, the social welfare increases by area BGC. This in fact equals to the deadweight loss when corrective tax is absent. (3 points. To get full scores, CS, PS, Tax revenue and bystanders' surplus each must be labeled correctly)



5. 《环境保护法》规定："排放污染物超过国家或者地方规定的污染物排放标准的企业事业单位，依照国家规定缴纳超标准排污费，并负责治理。……征收的超标准排污费必须用于污染的防治，不得挪作他用。"如果超标准排污费正确反映了污染的社会成本，则这一规定必定导致污染数量少于社会有效率数量。

正确（1分）。如果超标准排污费恰当地反映了企业污染的（边际）社会成本，那么，企业排放一定数量污染物并交纳相应的排污费就是社会有效率的（2分）。实际上，对这些污染物的治理成本高于了超标准排污费（否则企业会选择治理而不是交费），即节约的污染成本，导致污染治理过度，引起社会无效率。（1分）

6. A regressive tax (a tax for which high-income taxpayers pay a smaller fraction of their income than do low-income taxpayers) must result in a vertical-inequality, because the higher income a person has, the less amount of tax he or she will pay.

False (1 point). Although a regressive tax has an average tax rate decreasing with income, but if the speed of this decrease is slower that the increase of income, the total amount of tax paid (tax rate multiplied by income) will still increase. (3 points)

二、选择题（每题3分，共27分。每题只有一个正确答案。）

1. Melissa buys an iPod for $120 and gets consumer surplus of $80. If the price of an iPod were $90, her consumer surplus would be_____. If the price were $250, her consumer surplus would be_____.

A. $110; $-50

B. $110; $0

C. $0; $0
D. $0; $-50

2. Suppose an early freeze sours the apple crops. Then the producer surplus in the market for apples will _____. The producer surplus in the market for pears will _____. The consumer surplus in the market for fruits as a whole will _____. The social surplus in the market for fruits as a whole will_____. (Hint: Fruits include apples and pears. Apples and pears are substitutes.)

A. decrease, increase, decrease, decrease
B. decrease, increase, decrease, increase or decrease (cannot judge)
C. decrease, decrease, decrease, decrease
D. decrease, increase, increase, decrease

3. 离岸外包（Offshore Outsourcing）是某些企业将部分的中间生产交由劳动力成本更为低廉的国外工人完成。则这一做法将导致这些企业的工人 ____，企业的经营者 ____，企业整体上____。同时，由于产品的生产成本____，购买这些企业产品的消费者将____。（提示：考虑存在进口的劳动力市场。）

A. 受益，受损，受损；上升，受损
B. 受益，受损，受益；降低，受益
C. 受损，受益，受损；降低，受益
D. 受损，受益，受益；降低，受益

4. 学生宿舍中有两人，吸烟者和非吸烟者。学校考虑制定相关规定。第 1 种规定是吸烟者无需经过非吸烟者同意就可以吸烟。第 2 种规定是吸烟者需要经过非吸烟者同意后才能吸烟。第 3 种规定是对吸烟者罚款 100 元。假定非吸烟者对不吸烟的评价为 110 元（相对于被吸烟而言）。前两种规定下允许科斯谈判，第三种规定不允许科斯谈判。则对于吸烟者而言，第____种规定最有利，第____种规定最不利。

A. 3，2
B. 1，2
C. 1，3
D. 无法判断

5. 远古时代，人类社会从从事采集和狩猎业纷纷转向种植和畜牧业，由此获得了生产率的极大提高，很好地解决了人口增长带来的生存问题。这被历史学家称为“第一次经济革命”。对于生产率提高的原因，你认为合乎经济学原理的解释是：

A. 种植作物和蓄养家畜比野生动植物具有更高的繁殖能力
B. 人类和其他动物相比，天生更善于从事种植和畜牧业而非采集和狩猎业
C. 种植和畜牧业很好地解决了采集和狩猎业固有的“共有地悲剧”（Tragedy of Commons）问题
D. 人类对于种植作物和蓄养家畜的供给增加满足了对其需求的增加

6. Some states in the U.S. exclude necessities, such as food and clothing, from their sales tax. They also impose a higher tax on other goods to keep their total revenue unchanged. Such exclusion is most likely to be:

A. good for efficiency but bad for equity
B. bad for efficiency but good for equity
C. good for both efficiency and equity
D. bad for both efficiency and equity

7. Tim earns income of $60,000 per year and pays $21,000 per year in taxes. Tim paid 20 percent in taxes on the first $30,000 he earned. What was the marginal tax rate on the second $30,000 he earned?

A. 20 percent
B. 30 percent
C. 50 percent
D. 70 percent

8. A lump-sum tax is a tax that is the same amount for every person. According to the two objectives of efficiency and equity of tax system, this tax is:

A. very efficient but very inequitable
B. very inefficient and inequitable
C. very efficient and equitable
D. very inefficient but very equitable

9. If a poor family with an annual income of $10,000 has three children in public school and a rich family with an annual income of $100,000 has only one child in public school and two children in private school, the benefits principle would suggest that the _____ family should pay more in taxes to pay for public education, and the ability-to-pay principle would suggest that the _____ family should pay more in taxes to pay for public education.

A. poor, rich
B. poor, poor
C. rich, poor
D. rich, rich

三、问答题（共 3 题，49 分）

1. Tradable Pollution Permits (10 points)

There are three industrial firms in Happy Valley.

Firm	Initial Pollution Level	Cost of Reducing Pollution by 1 Unit
A	70 units	$20
B	80 units	$25
C	50 units	$10

The government wants to reducing pollution to 120 units, so it gives each firm 40 tradable pollution permits.

a. Who sells permits and how many do they sell? Who buys permits and how many do they buy? What is the total cost of pollution reduction in this situation? Use a graph to explain all your answers. What theory are your answers based on? (4 points)

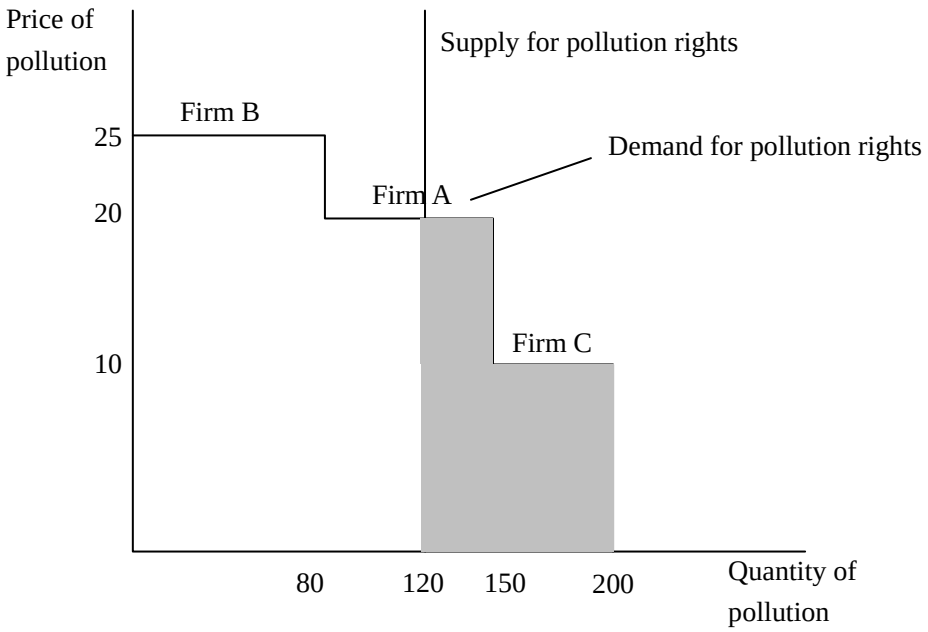
We can draw a graph for demand and supply of pollution rights as below. Each firm will demand

pollution rights at his initial pollution level if its price is below its unit cost of reducing pollution. Otherwise it would reduce all its pollutions. The supply is fixed at the amount of permits government issues. (1 points)

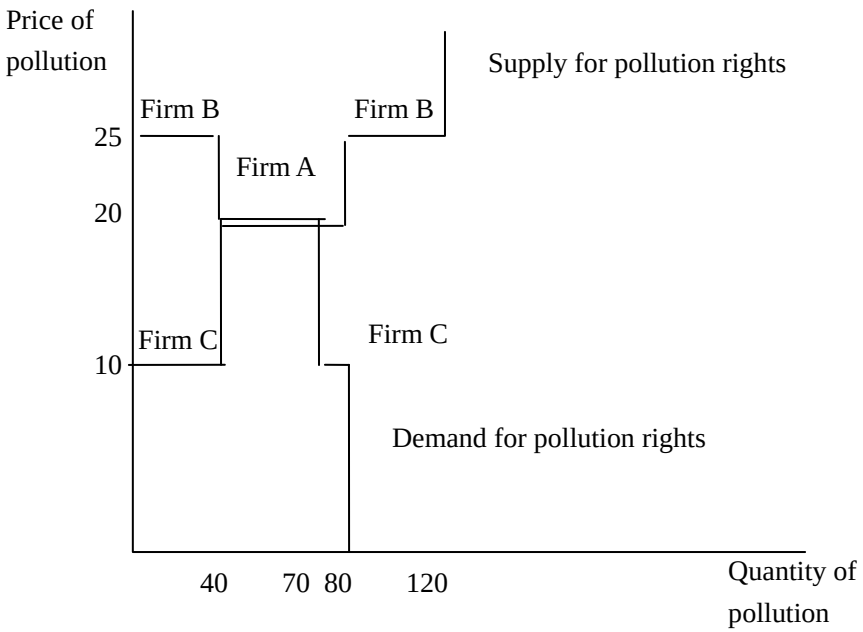
The figure shows that at equilibrium firm B will hold 80 permits, A will hold 40 permits and C will not hold any permits. So C will sell all his permits (40) to B. (1 point)

The total cost of pollution reduction is illustrated by the shaded area, which is (150-120)*20+(200-150)*10=$1,100. (1 point)

The theory the answers are based on is Coase theorem. It states that people can trade until they reach an outcome maximizing their joint welfare. (1 point)



Another possible way of graphing is considering the *net* demand and *net* supply instead of *gross* demand and *gross* supply. Note that each firm has initial endowment of 40 permits. So for example, when the price of permits (or pollution) is less than 25, firm B's net demand is just 40 permits instead of 80.



The equilibrium price is $20. And C will sell all its 40 permits and B will buy those 40 permits. firm A will not buy or sell any permits (or equivalently, firm A buys from itself 0 to 30 permits at price of $20). The answer is the same as we consider the gross demand and supply.

b. How much higher would the cost of pollution reduction be if the permits could not be traded? (1 point)

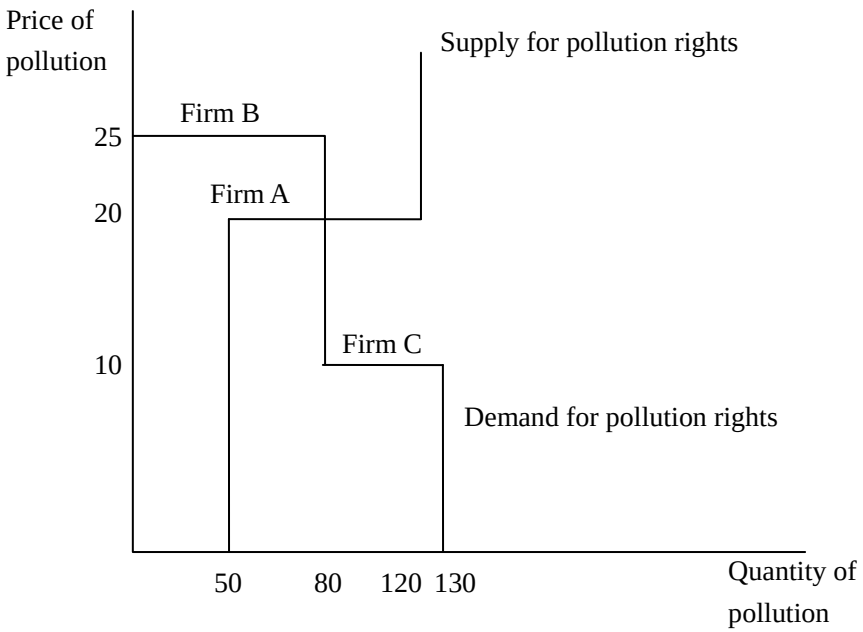
If the permits could not be traded, then firm A would have to reduce its pollution by 30 units at a cost of $20 x 30 = $600, firm B would reduce its pollution by 40 units at a cost of $25 x 40 = $1,000, and firm C would reduce its pollution by 10 units at a cost of $10 x 10 = $100. The total cost of pollution reduction would be $1,700, $600 higher than in the case in which the permits could be traded. (1 point)

c. Suppose the government gives 120 permits all to firm A. How do your answers in part (a) and (b) change? Explain. (2 points)

The equilibrium is still as in part (a). That is, firm B would finally get 80 permits and A would still hold the other 40 permits. So firm A would sell 80 permits to firm B. (1 point)

The total cost of pollution reduction is the same as in part (a), i.e., $1,100, which is $600 (OR $1,400) lower than the case in which permits could not be traded and each holds 40 permits at the beginning (OR just A holds all the permits). (1 point)

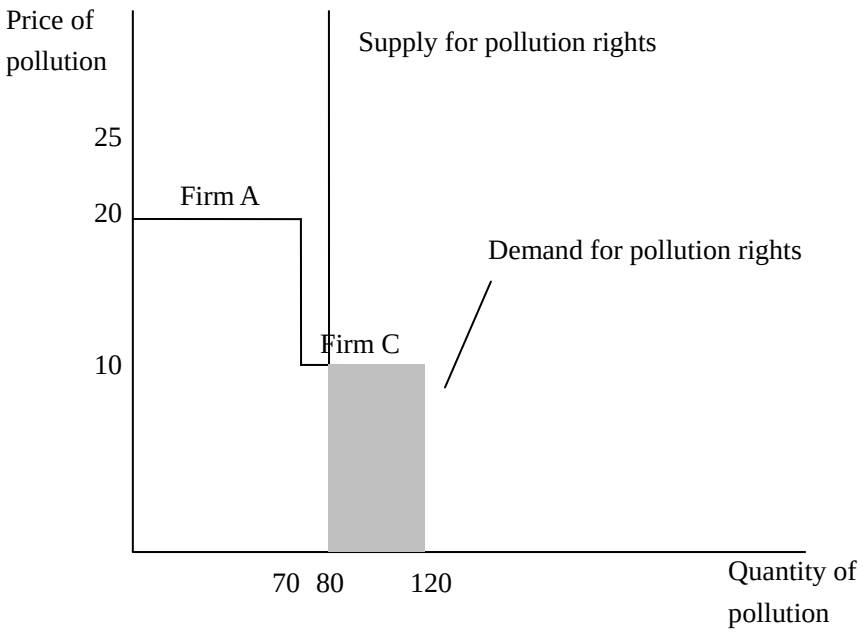
If you use the net demand-supply analysis, the graph is as below, but the equilibrium is the same.



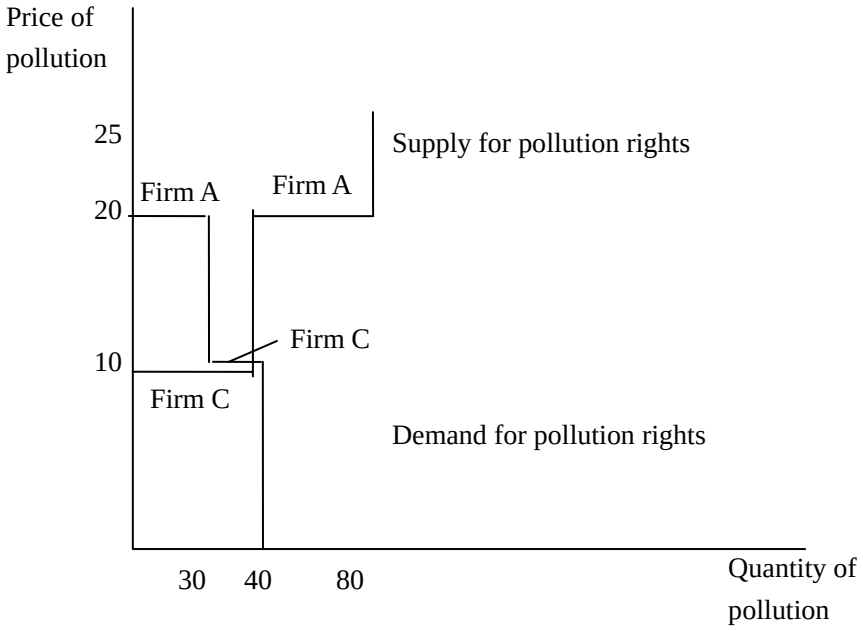
d. Suppose government gives each firm 40 tradable pollution permits, but firm B is prohibited from trading permits with any other firm. Who sells permits and how many do they sell? Who buys permits and how many do they buy? What is the total cost of pollution reduction in this situation? Use a graph to explain all your answers. How much higher is the cost of pollution reduction than if the permits could be traded freely between all three firms? (2 points)

If firm B is prohibited from trade, the market for pollution rights is shown as the graph below. Firm A will finally have 70 permits and C will have 10 permits. So Firm C will sell 30 permits to firm A. (1 point)

The total cost of pollution reduction of A and C together is the shaded area, which equals to $400. Firm B would have to reduce 40 units of pollution, with a cost of 40*25=$1000. The total cost pollution reduction of all three firms is $400+$1,000=$1,400, which is $300 higher than free trade case. (1 point)



The net demand-supply graph is as below. The answer would be the same.



e. If the government instead wants to use a corrective tax on pollution to reduce it to *no more than* 120 units. What is the smallest tax size the government should set? (1 point)

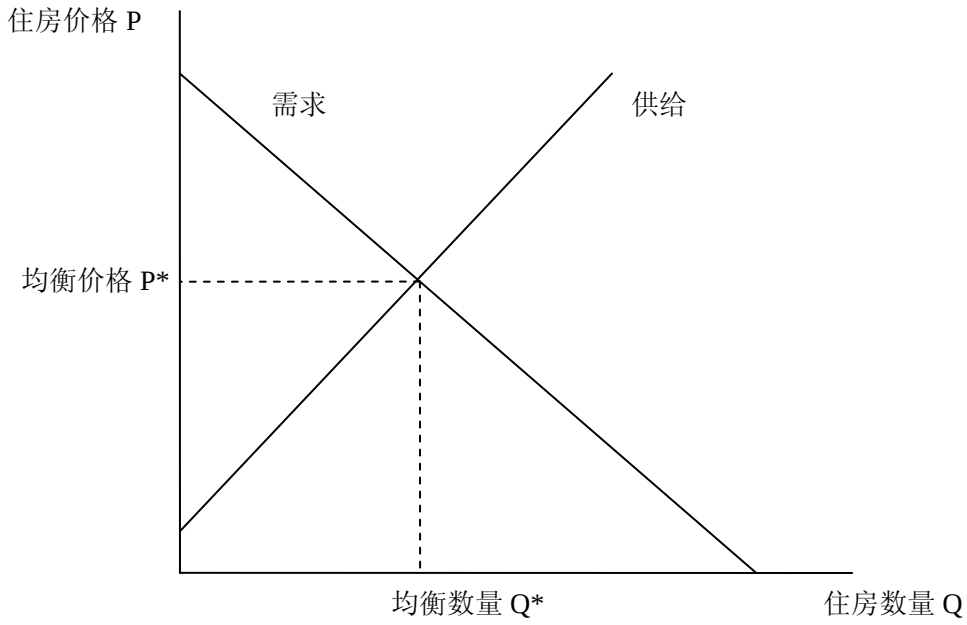
The government should set the size of tax at least at $20 (or slightly less than $20).

2. 住房限购政策的影响（16 分）

考虑一个买卖住房市场。

（1） 画出一个典型的市场供求图形表示该住房市场。（1 分）

如下图。



政府出台政策限制该市场买者可以购买的数量。假定该限制政策使得在任何价格下的需求量都减少一半（例如，原来所有人最多买两套房，现在都只能买一套房）。

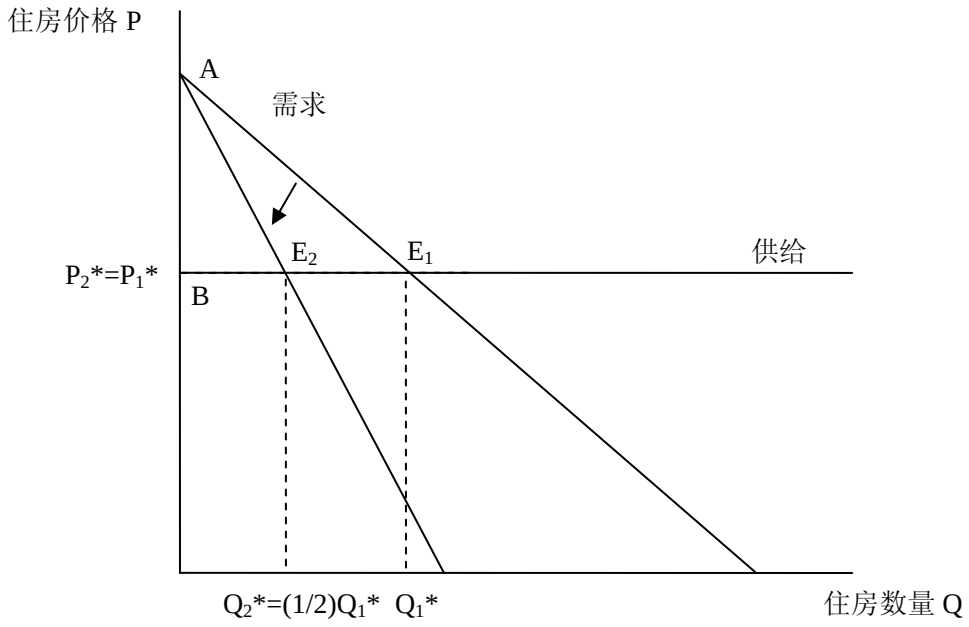
（2） 当住房供给弹性较大时，限购政策如何影响市场均衡？这一政策倾向于使得买者总体上受益还是受损？生产者总体上受益还是受损？社会总福利增加还是减少？画图仔细说明。（提示：考虑完全供给弹性。）（2 分）

为分析简便，考虑一个完全富于弹性的供给。如下图。限购政策使得需求曲线左移，横向移动原距离的一半。均衡数量从 Q_1*下降到 Q_2*=(1/2)Q_1*。但均衡价格不变：P_1*=P_2*。（如果供给弹性不是无穷大但较大，则均衡数量下降较大，但均衡价格下降较小。）（0.5 分）

消费者剩余从面积 ABE_1 下降到 ABE_2，下降一半。（0.5 分）

生产者剩余不变。（但如果供给弹性不是无穷大，生产者剩余肯定有所下降，因为需求减少。）（0.5 分）

社会总福利下降，此处等于消费者剩余下降。（但如果供给弹性不是无穷大，则社会总福利下降还包括生产者剩余的下降。）（0.5 分）



（3） 当住房供给弹性较小时，这一政策倾向于使得买者总体上受益还是受损？生产者总体上受益还是受损？社会总福利增加还是减少？画图仔细说明。（提示：考虑供给完全无弹性。）（3 分）

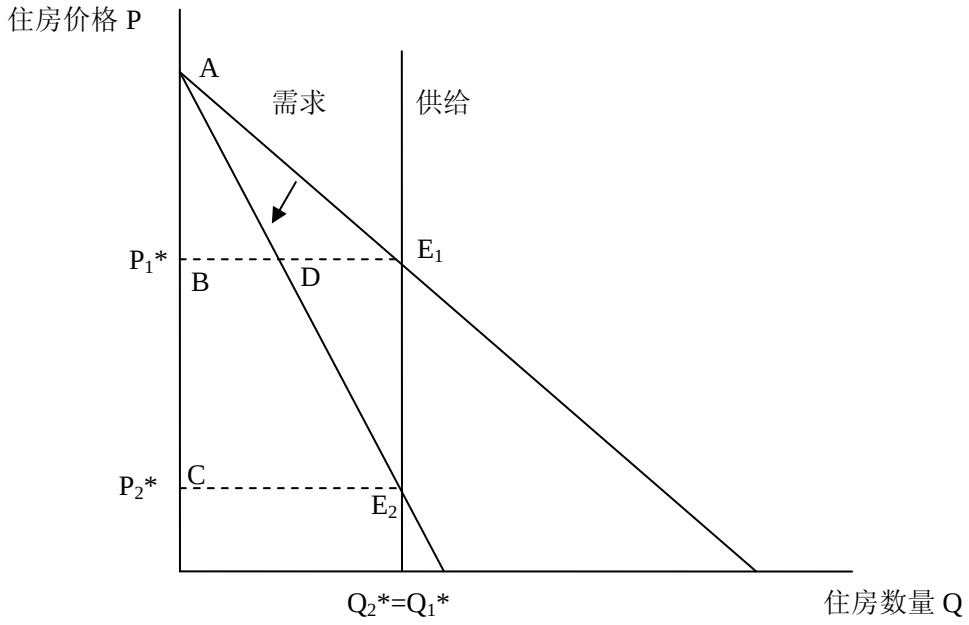
为分析简便，考虑供给完全无弹性。如下图。（0.5 分）

限购政策不改变均衡数量：$Q_2^*=Q_1^*$。但使得均衡价格下降，$P_2^*<P_1^*$。（如果供给不是完全无弹性但弹性较小，则均衡数量下降较小，均衡价格下降较大。）（0.5 分）

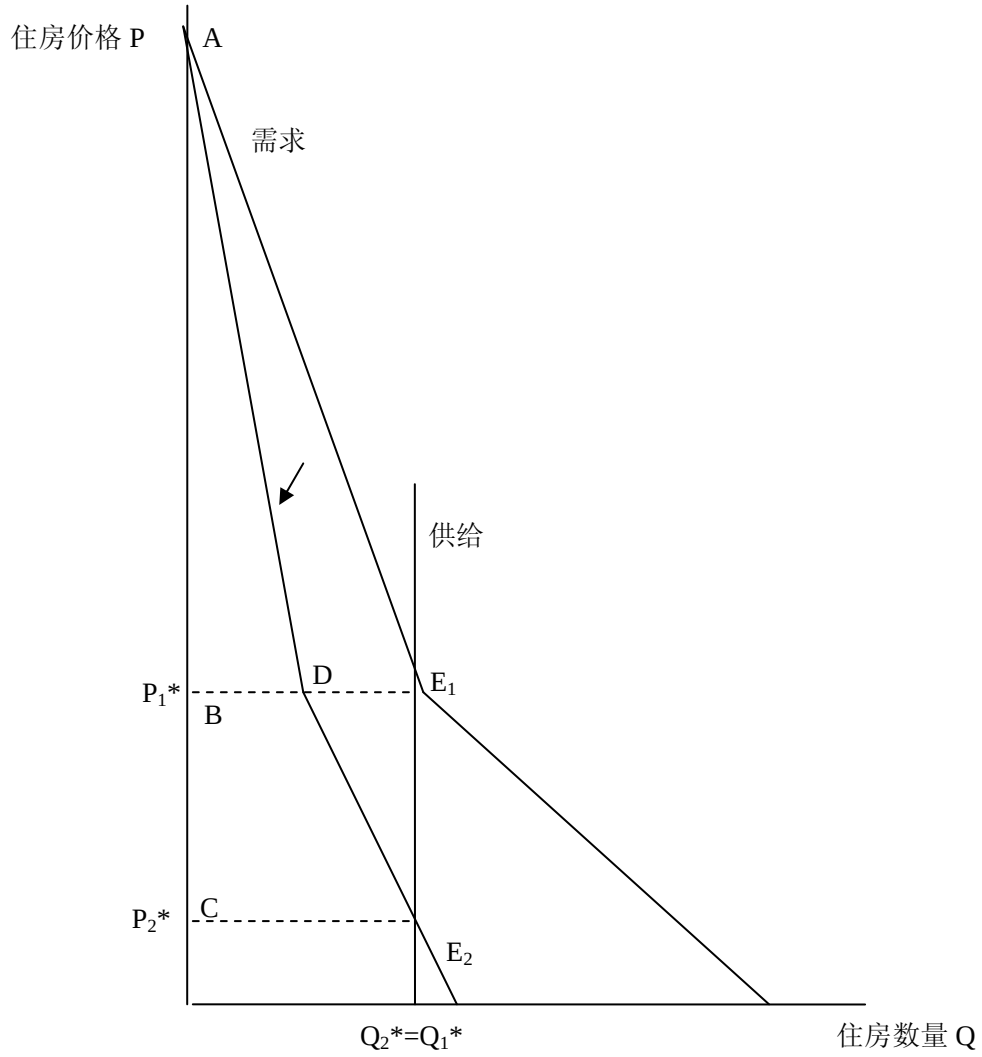
买者受益。如图，消费者剩余从面积 ABE_1 上升到面积 ACE_2。（注意到两个直角三角形底边相等但高不同）。（1 分）

生产者受损。图中，生产者剩余下降面积 BCE_2E_1。（0.5 分）

社会总剩余下降。图中，社会总剩余减少面积 AE_2E_1。（0.5 分）



【注】（答卷不要求）消费者剩余增加的结果依赖于直线价格。如下图，消费者剩余可能不增加。此时限购减少的消费者剩余面积 ADE1 可能大于增加的面积 BDE_2C。直观来说，限购使得一些支付意愿极高的人不能不少买，而价格下降相对较小（注意需求曲线的拐点），由此带来的好处有限。

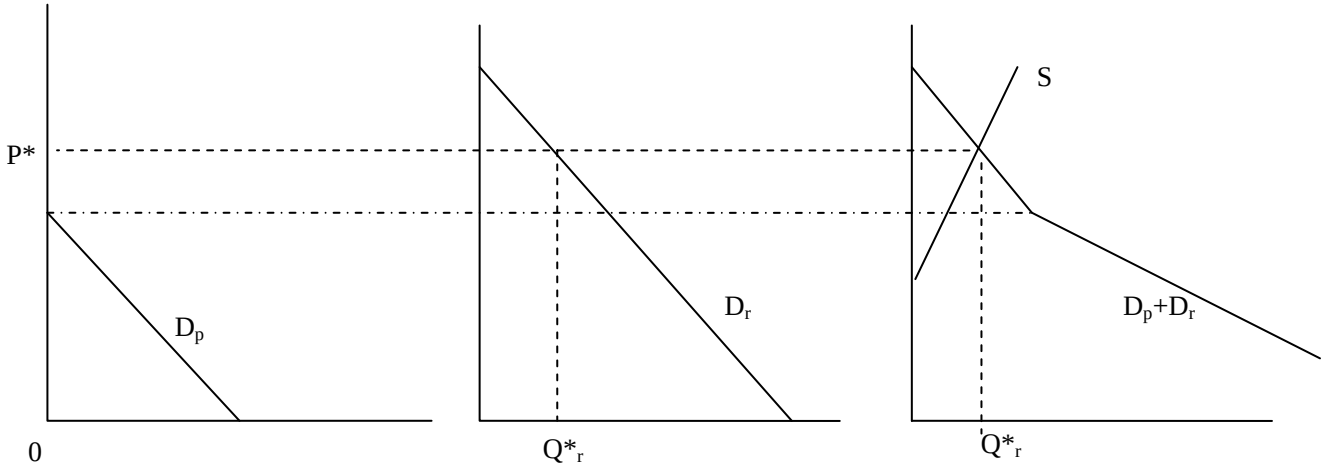


下面考虑这项政策对于不同住房买者的影响。为简便，假定仅有两类买者：富人和穷人。首先分析没有限购的情况。

（4） 从左至右画出三幅图，分别表示穷人的需求曲线，富人的需求曲线，市场总供求曲线。穷人和富人的需求曲线的区别是什么？画出市场总供求曲线使得市场均衡下穷人购房量等于零（即“买不起房”）。（2 分）

如图。市场均衡价格为 P*，穷人购买量为 0，富人为 Q^*_r。（1 分）

穷人的需求曲线低于富人（或相当于富人需求左移）。（1 分）

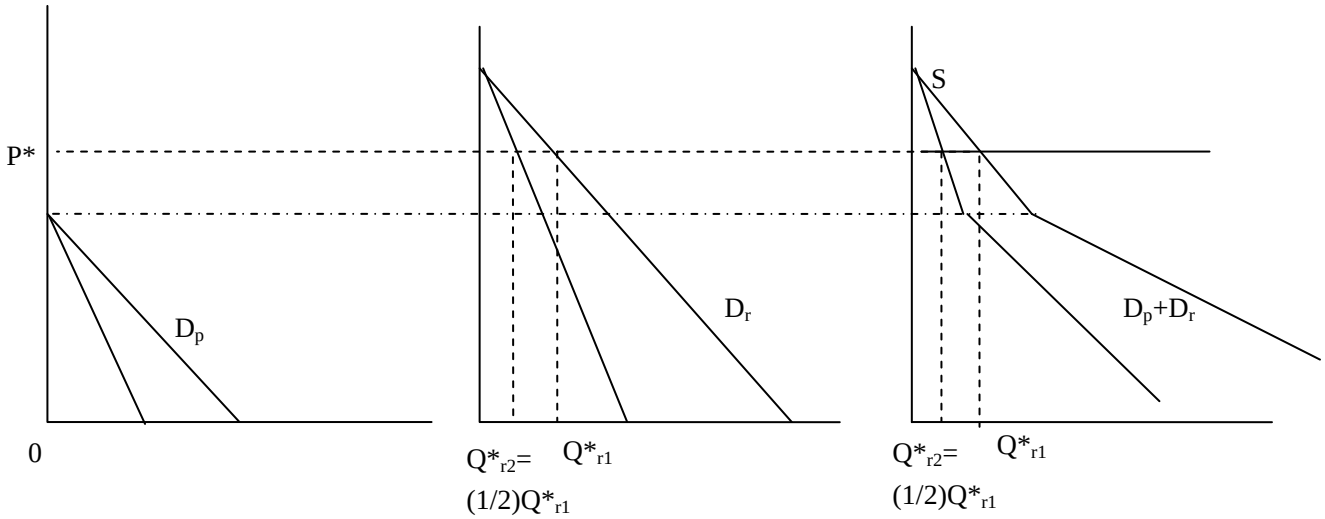


下面考虑有限购政策的情况。假定限购政策使得每个人（无论穷人还是富人）的需求量在任何给定价格下均下降一半。

（5） 当住房供给弹性较大时。限购政策能使穷人买得起房吗？富人受益还是受损？运用图形回答。（提示：考虑供给完全弹性。）（2 分）

为简便仍考虑供给完全富于弹性的情况。如下图。（1 分）

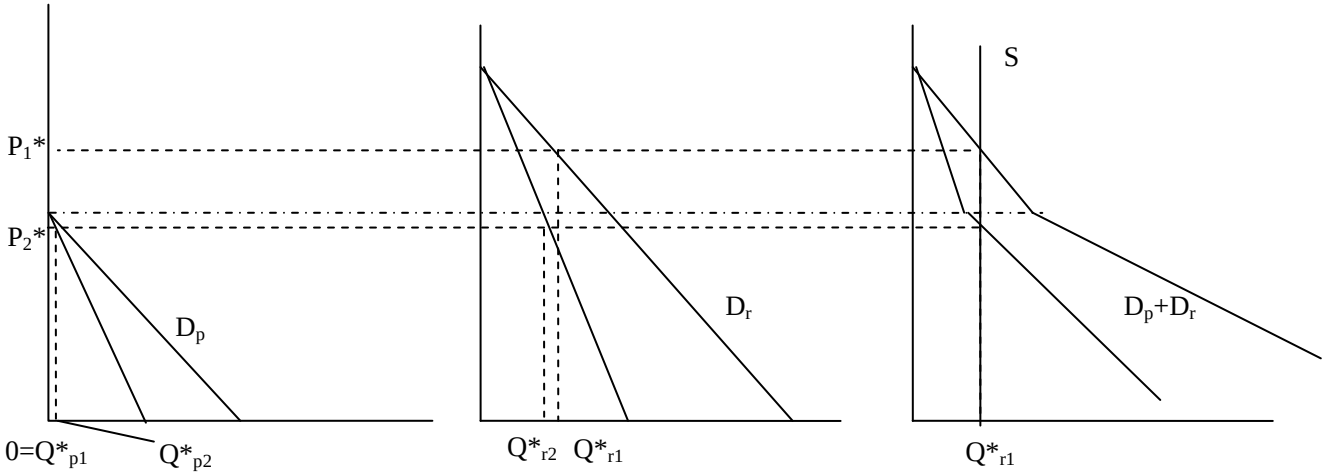
由于均衡价格不变，穷人仍然买不起房（0.5 分）；富人的需求量下降一半，受损。（0.5 分）



（6） 当住房供给弹性较小时，限购政策有可能使穷人买得起房吗？必定使穷人买得起房吗？你的回答如何依赖于富人的需求弹性？运用图形说明你的所有答案。限购政策必定对穷人有利而对富人不利吗？（提示：考虑供给完全无弹性）。（4 分）

我们画出供给无弹性的图形。如下图所示。（1 分）

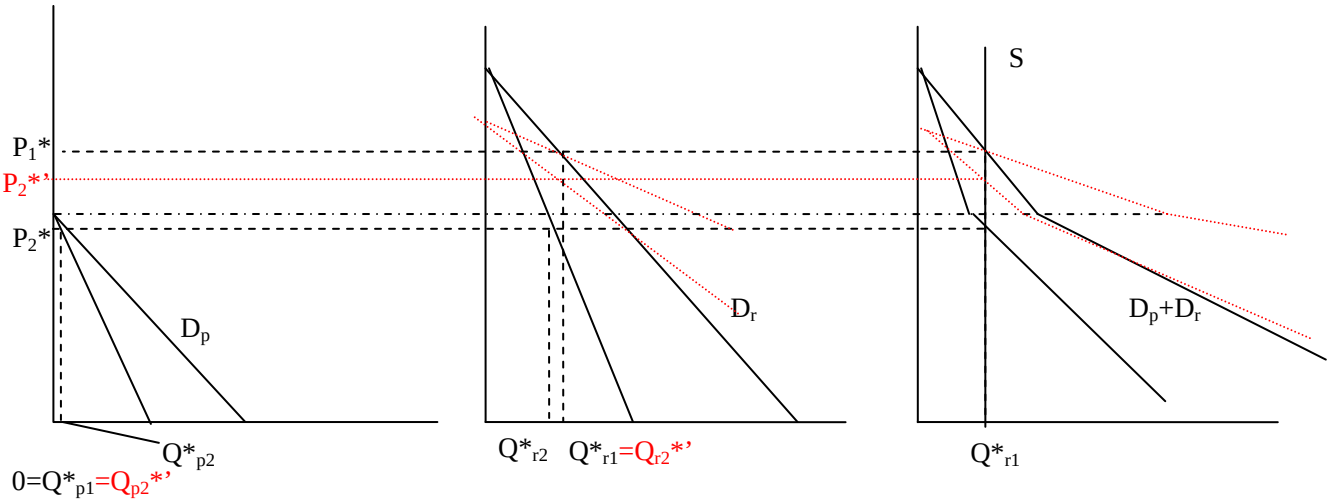
限购有可能使得穷人买得起房，限购使得价格下降到穷人最高支付意愿之下（P_2*），则穷人买得起房：Q_{p2}*>0。如图。（1 分）



不过，这一政策却未必能使穷人买得起房。考虑富人的需求弹性上升。则价格的下降减少，有可能高于穷人的最高支付意愿（图中红线）。此时，富人购房量不变，穷人也不变（为零）。（1 分）

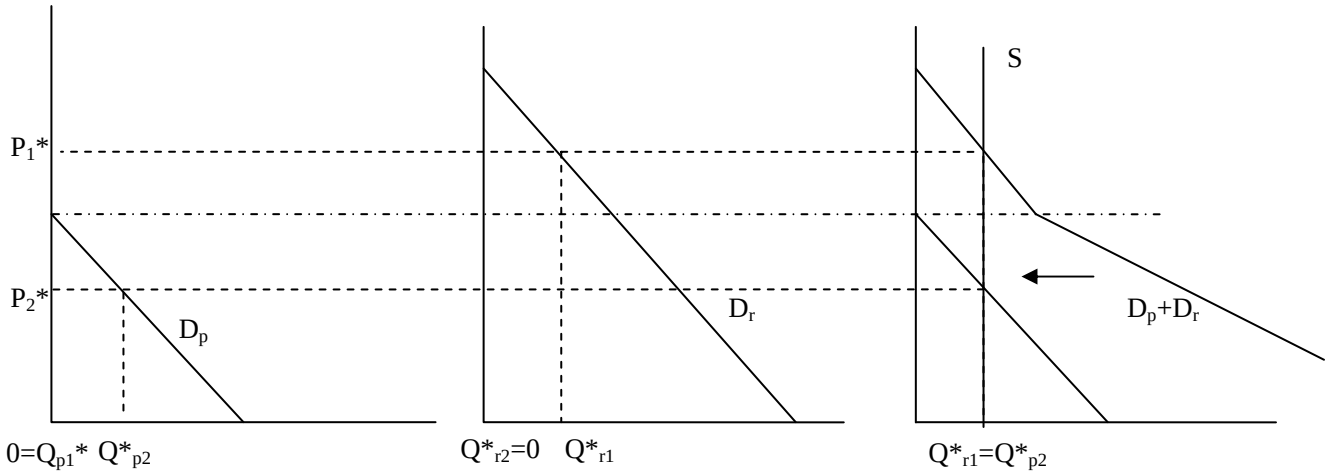
在上述第一种情形下，限购对于穷人有利，但未必对于富人不利（富人购买量下降，但同时价格也下降了）。（0.5 分）

在上述第二种情形下，限购对于穷人无影响。但对于富人有利，理由同第（3）问。（0.5 分）

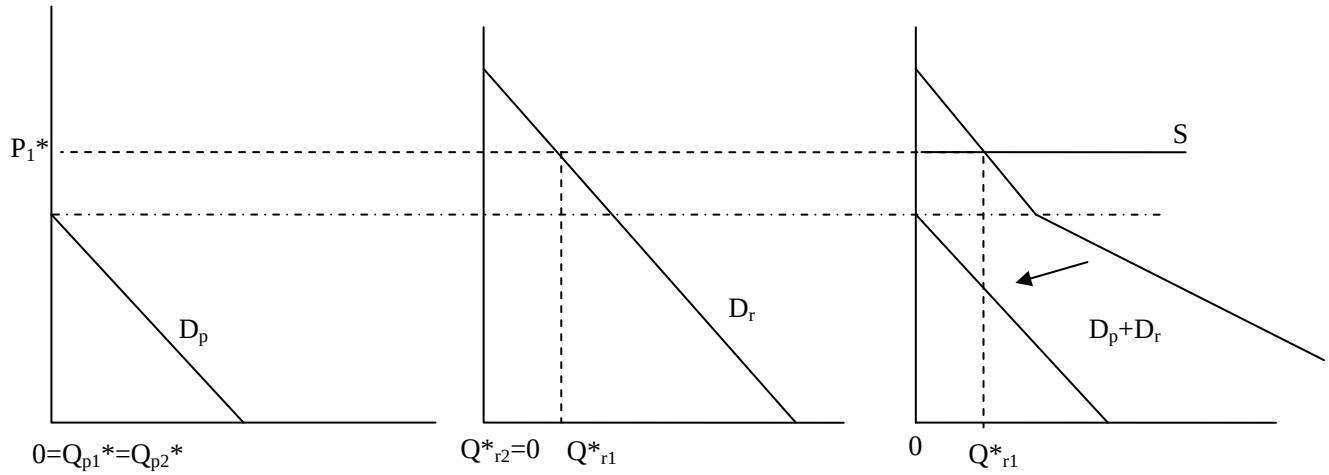


（7）　现在改变限购使得所有人都减少一半需求量的假设。假定限购使得富人的需求量降为零，但穷人的需求不变。（因为富人拥有的住房数量已经达到了上限，穷人并不想买两套房）。限购政策必定使穷人买得起房吗？限购政策必定对穷人有利而对富人不利吗？（提示：考虑供给弹性。）　（2 分）

当供给无弹性时，如下图。穷人必定买得起房。限购政策必定对穷人有利而对富人不利。（1 分）



当供给完全富于弹性时，如下图，住房市场消失。穷人仍然得不到住房，限购政策对所有人不利。（1 分）



3. Health Insurance (23 points)

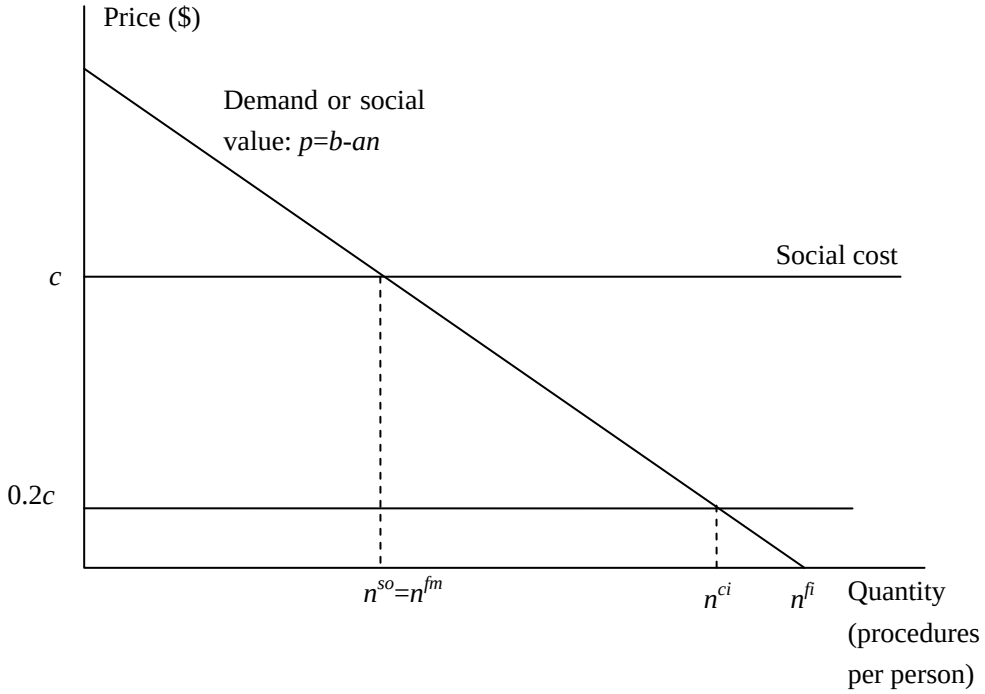
Consider how health insurance affects the quantity of healthcare services performed. Suppose that the typical medical procedure has a cost of $*c*. A typical individual (inverse) demand curve for healthcare services is $p=b-a*n$, where p is price of each medical procedure, n is the number of procedures an individual demands, b and a are constant. There are N individuals in the society.

a. What is the other name for demand curve in economics? What is the socially optimal amount of medical procedure *per person* in this society? Here social optimum means the maximization of total social surplus. Illustrate this point in a proper graph.(2 points)

The other name for demand curve is buyer's (marginal) value curve, or (marginal) willingness to pay (WTP) curve. Here it also equals to social value curve (no externality).(1 point)

The social optimum (or the maximized total surplus) would require that the marginal social benefit of a procedure equals to its marginal social cost (per person). That is, $b-an=c$. So the socially optimal amount of procedures per preson is $n^{so}=(b-c)/a$. (0.5 point)

The graph is as below. (0.5 point)



b. In a free market, what is the equilibrium amount of procedures per person? Illustrate it in the *same* graph. Does the equilibrium realize the social optimum? (1 point)

The social optimal outcome is exactly the free market equilibrium. That is, $n^{fm}=(b-c)/a$. (0.5 point)
See the graph above. (0.5 point)

Suppose now the health insurance system is introduced. Suppose also that everyone in this system is fully insured. That is, in this system, each procedure a person receives would be fully paid by the insurance system. However, the system must be budget balanced, i.e., it would recoups the money it pays through premiums *as a whole*.

c. In this system, what would be the number of procedure each person chooses to receive? Specify your calculation. When N approach infinity, what would this number equal to? (Hint: consider a cost (or expenditure) function of a typical person i as $c(n_i, n_{-i})$, where n_i is the number of procedures he receives, n_{-i} is the number all the other people received.) Show your result in the graph above by assuming N is infinite. (3 points)

Person i's cost function is, $c(n_i, n_{-i})=c(n_i+n_{-i})/N$. (1 point)
To determine the number of procedure it would choose, the person would maximize his consumer surplus from the medical services. This implies he would choose n_i such that its marginal benefit (value) equals to marginal cost.
The marginal private cost of each procedure can be derived from the cost function as:
$\partial c(n_i, n_{-i})/\partial n_i=c/N$.
(If you do not know partial derivatives, you can calculate it in any other proper way.)
The marginal benefit is $b-an_i$. So the optimal number for a person is determined by:
$b-an_i=c/N$. Or, $n_i=(b-c/N)/a\equiv n^{fi}$. (1 point)
When $n\to\infty$, $n^{fi}\to b/a$. (0.5 point)
See the graph above. (0.5 point)

d. Is the result in part (c) socially optimal? What kind of problem happens in the system as

economists call it? (1 point)

No. The number of procedures (far) exceeds the social optimal amount. Economists call the problem as “tragedy of commons”.

Now the system switches to a partial insurance (or co-insurance) system. In such a system, a person would pay 20% of the full procedure cost out of pocket. The system would pay the remaining 80%.

e. In this new system, what would be the number of procedure each person chooses to receive? Specify your calculation. When N approach infinity, what would this number equal to? Show your result in the graph above when N is infinite. (3 points)

Person i’s cost function is, $c(n_i, n_{-i})=0.2cn_i+0.8c(n_i+n_{-i})/N$. (1 point)

The marginal private cost is: $\partial c(n_i, n_{-i})/\partial n_i=0.2c+0.8c/N$.

The optimal number of procedure of a person is: $b-an_i=0.2c+0.8c/N$. Or, $n_i=(b-0.2c-0.8c/N)/a \equiv n^{ci}$. (1 point)

When $n\to\infty$, $n^{ci}\to(b-0.2c)/a$. (0.5 point)

See the graph above. (0.5 point)

f. Is the result in part (e) socially optimal? How does it compare to full insurance system in part (c) ? (1 point)

No. But it is more efficient that full insurance system in part (c).

Suppose now the system changes to a system with both co-insurance and deductions. In particular, a person needs to pay the full cost until he reaches a certain number of procedures, $\bar{n}$. After that, he only needs to pay 20% of the full cost for each procedure he receives.

g. Assume first the deduction is so small that $\bar{n}\le(b-c)/a$. In this system, what would be the number of procedure each person chooses to receive? Show your result in a *separate* graph, assuming N is infinite. Is the result efficient? How does it compare to result in part (e)? (4 points)

Let’s hypothesis that all $n_i\ge \bar{n}$ .Then:

Person i’s cost function is, $c(n_i, n_{-i})=c\ \bar{n}+0.2(n_i-\bar{n})c+[0.8c\ (n_i+n_{-i}-N\ \bar{n})]/N$. (1 point)

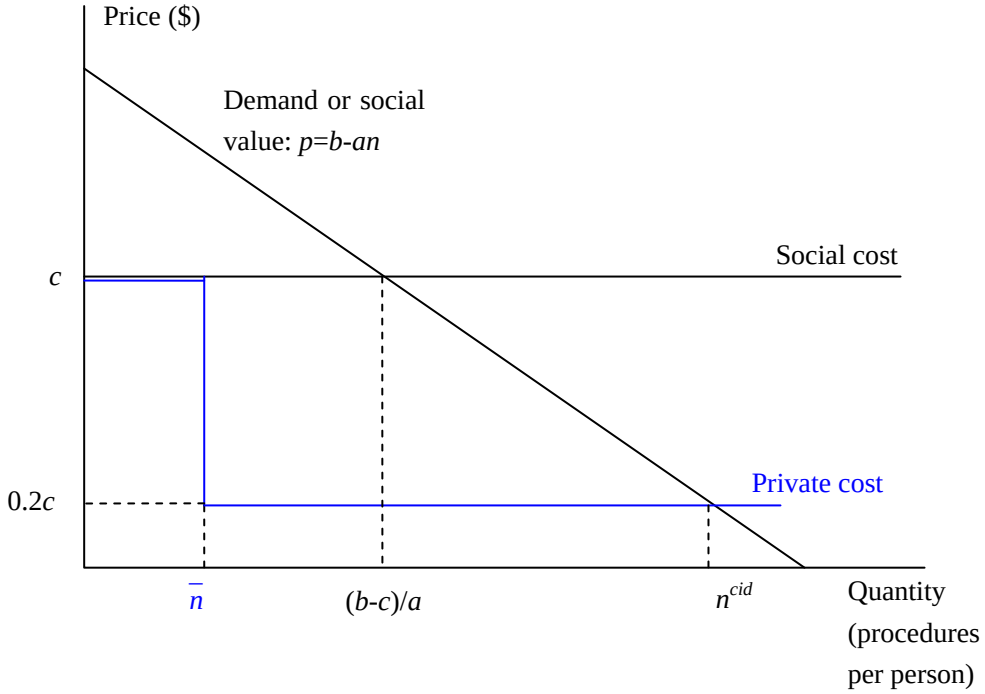
Marginal private cost is: $\partial c(n_i, n_{-i})/\partial n_i=0.2c+0.8c/N$.

The number of procedure a person chooses is: $b-an_i=0.2c+0.8c/N$. Or, $n_i=(b-0.2c-0.8c/N)/a \equiv n^{cid}$. (1 point)

When $n\to\infty$, $n^{cid}\to(b-0.2c)/a$.(0.5 point)

See the graph below. (0.5 point)

It is inefficient. In fact, the number of procedure a person chooses to receive is the same as in part (e), a result of “tragedy of commons”. (1 point)



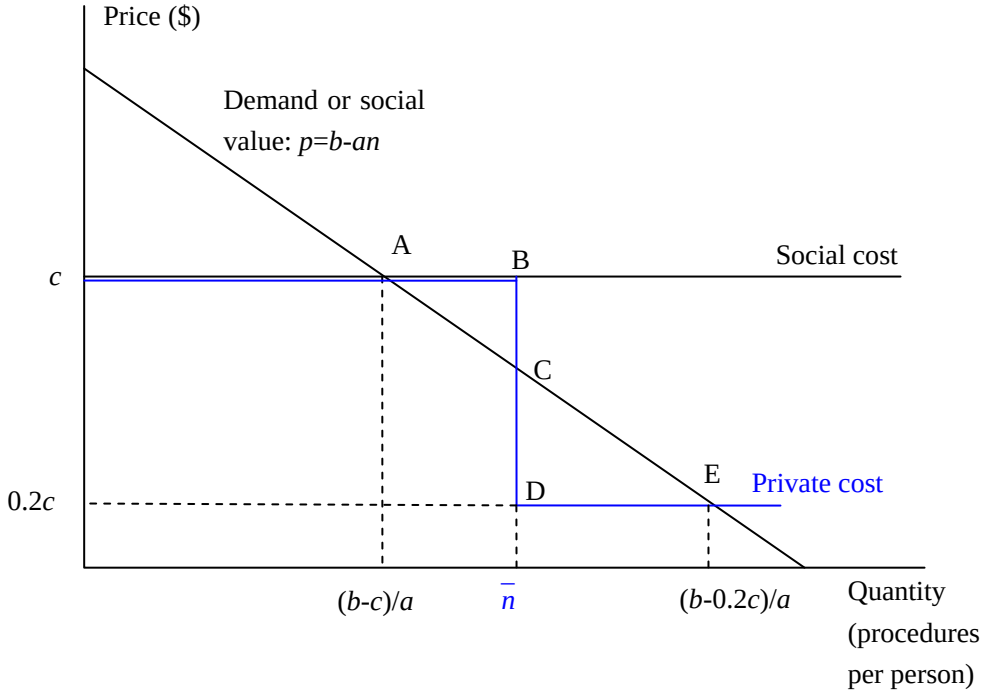
h. Now assume the deduction is moderate that $(b\text{-}0.2c)/a > \bar{n} > (b\text{-}c)/a$. In this system, what would be the number of procedure each person chooses to receive? Show your result in a *separate* graph. Assume N is infinite. Is the result efficient? How does it compare to result in part (e)? (Hint: Draw the graph first and analyze by using the graph.) (3 points)

The private marginal cost of a person is similar with in part (g), but with a different $\bar{n}$. See the graph below. (1 point)

The optimal decision of a person is either $n^{cid}=(b\text{-}c)/a$ (point A in the graph below) or $n^{cid}=(b\text{-}0.2c)/a$ (point E in the graph), depending on the comparison of areas between triangle ABC and CDE. If $\bar{n}$ is large (i.e., close to $(b\text{-}0.2c)/a$), then compared with point E, the cost of choosing A (area CDE) is smaller than its benefit (area ABC). Then the optimal decision of a person would be point A: $n^{cid}=(b\text{-}c)/a$. That is, point A in the graph. Otherwise $n^{cid}=(b\text{-}0.2c)/a$. (1 point)

The result might be efficient (when the person chooses A) or not (when he chooses E). Intuitively, when the deduction is large, the person is more likely to face the real social cost, so the outcome reaches social optimum.(0.5 point)

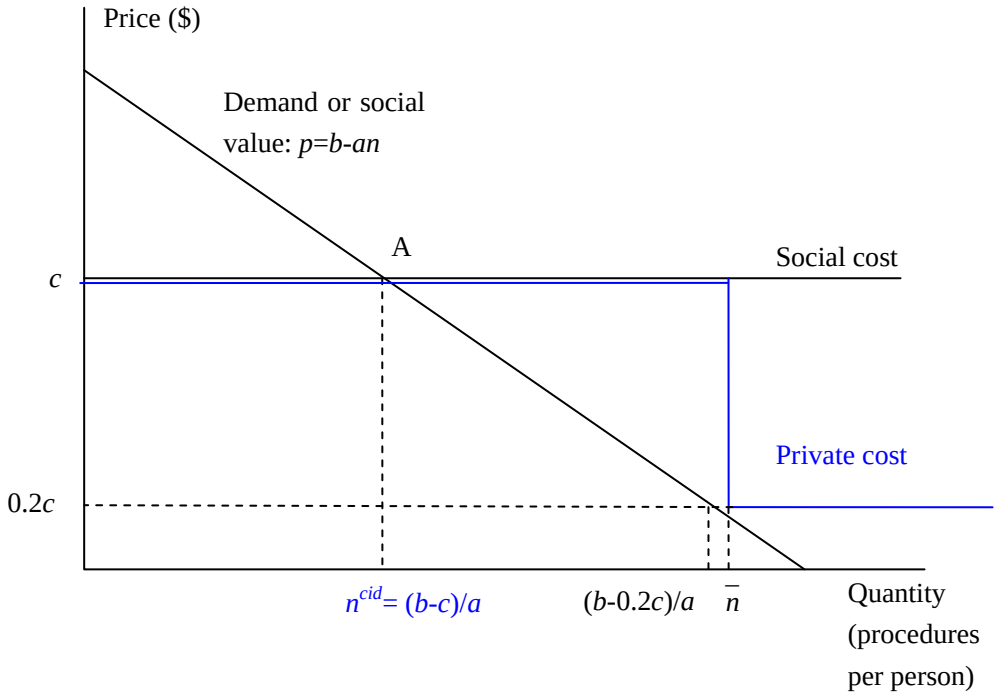
Also, the result might be the same as in part (e) (when E is reached) or smaller, depending on the deduction. (0.5 point)



i. Now assume the deduction is very large that $\bar{n}>(b\text{-}0.2c)/a$. What would be the number of procedure each person chooses to receive? Show your result in a *separate* graph. Assume N is infinite. Is the result efficient? How does it compare to result in part (e)? (1 points)

The optimal decision of a person is $n^{cid}=(b\text{-}c)/a$ (point A in the graph below). (0.5 point)

The result is efficient. The quantity performed is less than in part (e).(0.5 point)



Suppose now the system changes to yet another system with co-insurance and ceilings. In

particular, a person only needs to pay 20% of the full cost for each procedure he receives until he reaches a certain number of procedures, $\bar{n}$. After that, he needs to pay the full cost.

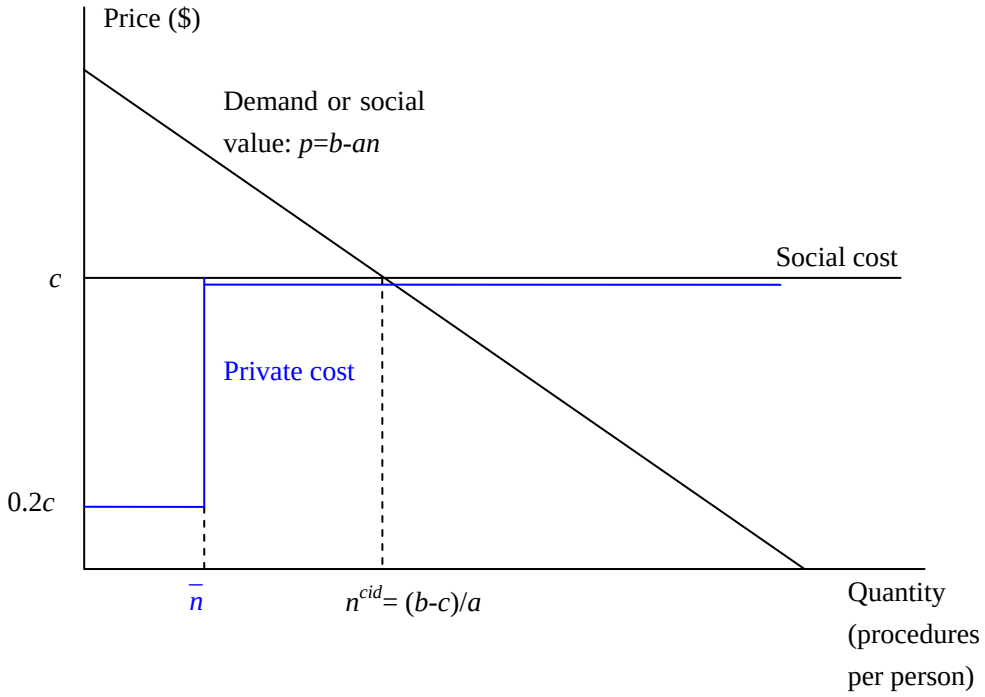
j. In this system, what would be the number of procedure each person chooses to receive? How does your answer depend on the level of $\bar{n}$? Show your result in a *separate* graph Assume N is infinite. Is the result efficient? How does it compare to result in part (e)? (3 points)

The private marginal cost curve is shown below (graph I, II and III). (1.5 points)

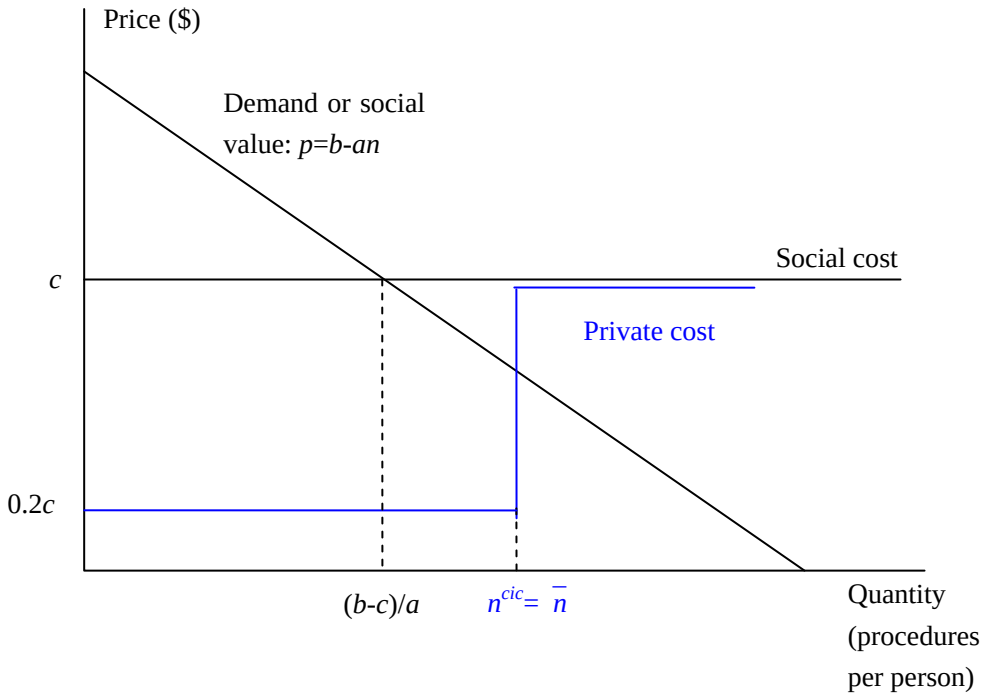
If $\bar{n}$ is small, i.e, $\bar{n}<(b-c)/a$, a person would choose a number of procedures as $n^{cic}=(b-c)/a$. That is the social optimum. (graph I) The quantity is less than in part (e). (0.5 point)

If $\bar{n}$ is moderate, i.e, $(b-c)/a < \bar{n}<(b-0.2c)/a$, a person would choose a number of procedures as $n^{cic}= \bar{n}$, which is not social optimum. (graph II) The quantity is less than in part (e) (0.5 point)

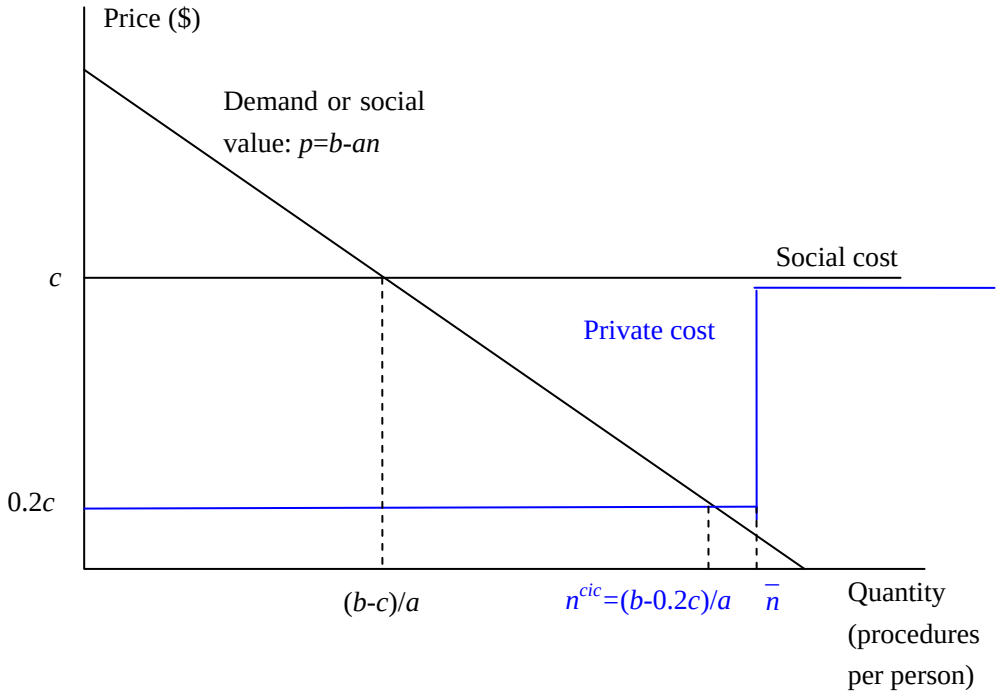
If $\bar{n}$ is large, i.e., $n>(b-0.2c)/a$, a person would choose a number of procedures as $n^{cic}=(b-0.2c)/a$. (graph III) Not social optimum. The quantity is the same as in part(e). (0.5 point)



Graph I



Graph II



Graph III

k. Let's compare the last two insurance systems: coinsurance with deductions (CID) and coinsurance with ceilings (CIC), with the same level of the cutoff point, $\bar{n}$. Which system is more likely to be efficient? Which system is better for more severely ill persons and which system is better for less severely ill persons? Assume more severely ill persons have higher

evaluation on medical procedures. Explain. (1 points)

It cannot judge which one is more efficient. If the demand for medical service is low, the CID system is more efficient since a person face the real social cost. Otherwise the CIC system is more efficient. (0.5 point)

The CID system is better for more severely ill persons because people would be (highly) insured after their procedures needed reach some point. The CIC system is better for less severely ill persons because those persons would be insured at the very beginning and they are not concerned about the full cost for procedures beyond their requirements. (0.5 point)