厦门大学《经济学原理》课程试卷

经济学院与王亚南经济研究院 2016 年级本科国际化试点班

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Principles of Economics

Midterm Examination

Part I
Multiple Choices (2 points each)

1. Vladimir and Estragon are waiting for Godot. Godot is late. Vladimir and Estragon consider whether to leave or continue waiting. If they leave, they could go to a concert tonight. The enjoyment of the concert is u_C. The ticket price of the concert is p_C. The pleasure of seeing Godot is u_G, while the psychological cost of continue waiting, in terms of the anxiety it causes, is c_G. What is the opportunity cost of choosing to wait for Godot?

   (a) c_G

   (b) $u_C + c_G$

   (c) $u_C - p_C$

   (d) $u_C - p_C + c_G$

2. Felix Grandet is choosing among three investment projects: A, B, and C. A costs \$1 million to invest and is expected to generate \$10 million in revenue. B costs \$5 million to invest and is expected to generate \$20 million in revenue. C costs \$10 million to invest and is expected to generate \$30 million in revenue. What is Grandet's opportunity cost of choosing project C?

   (a) \$15 million

   (b) \$20 million

   (c) \$25 million

   (d) \$30 million

3. Lady Macbeth goes out to buy milk. When the price of milk is \$1 per litre, she buys 10 litre. When the price of milk is \$3 per litre, she buys 4 litre. Suppose her demand curve is linear and stays the same, when the price of milk becomes \$4 per litre, how much will she buy?

   (a) 1 litre

   (b) 2 litre

   (c) 4 litre

   (d) 7 litre

4. New cars are normal goods. What will happen to the equilibrium price of new cars if the price of gasoline rises, the price of steel falls, public transportation becomes cheaper and more comfortable, auto-workers accept lower wages, and automobile insurance becomes more expensive?

   (a) Price will rise.

   (b) Price will fall.

   (c) Price will stay exactly the same.

   (d) The price change will be ambiguous.

5. Other things being equal, which of the following events can lead to an increase in the demand for college professors?

   (a) an increase in college tuition

   (b) an increase in the number of high school teachers

   (c) an increase in the number of college textbooks

   (d) an increase in government financial aid for college students

6. Which of the following events would unambiguously cause an increase in the price of soy milk?

   (a) An increase in the price of milk and an increase in the price of soy beans

   (b) An increase in the price of milk and a decrease in the price of soy beans

   (c) A decrease in the price of milk and an increase in the price of soy beans

   (d) A decrease in the price of milk and a decrease in the price of soy beans

7. Which of the following might cause the demand for an inferior good to increase?

   (a) An increase in income

   (b) An increase in technology

   (c) An increase in the price of a substitute

   (d) An increase in the price of a complement

8. When consumers face rising gasoline prices, they typically

   (a) reduce their quantity demanded more in the long run than in the short run.

   (b) reduce their quantity demanded more in the short run than in the long run.

   (c) do not reduce their quantity demanded in the short run or the long run.

   (d) increase their quantity demanded in the short run but reduce their quantity demanded in the long run.

9. Which of the following statements is not valid when supply is perfectly elastic?

   (a) The elasticity of supply approaches infinity.

   (b) The supply curve is horizontal.

   (c) Very small changes in price lead to very large changes in quantity supplied.

   (d) The time period under consideration is more likely a short period rather than a long period.

10. The demand for Godiva mint chocolates is likely quite elastic because

    (a) there are many close substitutes.

    (b) this particular type of chocolate is viewed as a luxury by many chocolate lovers.

    (c) the market is narrowly defined.

    (d) All of the above are correct.

11. When the price of candy bars is \$1.00, the quantity demanded is 500 per day. When the price falls to \$0.80, the quantity demanded increases to 600. Assuming that demand stays constant during this time, using the midpoint method, the demand for candy bars is[1]

    (a) inelastic.

    (b) elastic.

    (c) unit elastic.

    (d) perfectly inelastic.

[1] This question asks you to calculate the arc elasticity of demand based on the information given.

12. If a price ceiling is not binding, then

    (a) the equilibrium price is above the price ceiling.

    (b) the equilibrium price is below the price ceiling.

    (c) it has no legal enforcement mechanism.

    (d) None of the above is correct because all price ceilings must be binding.

13. If an increase in income results in a decrease in the quantity demanded of a good, then for that good, the

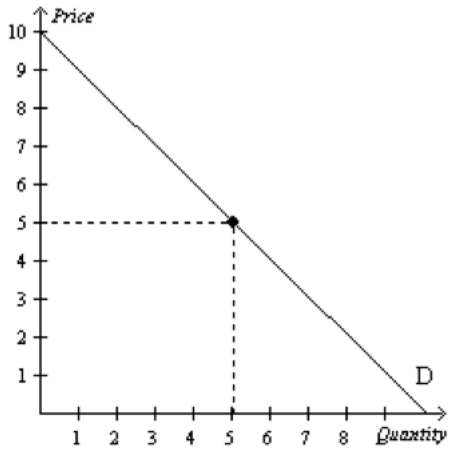
    (a) cross-price elasticity of demand is negative.

    (b) price elasticity of demand is elastic.

    (c) income elasticity of demand is negative.

    (d) income elasticity of demand is positive.

14. In the following graph,



    for prices above \$5, demand is price

    (a) elastic, and raising price will increase total revenue.

    (b) inelastic, and raising price will increase total revenue.

    (c) elastic, and lowering price will increase total revenue.

    (d) inelastic, and lowering price will increase total revenue.

15. Holding other factors unchanged, when both the price elasticity of demand and that of supply increase, the deadweight loss of a tax

    (a) can either increase or decrease, depending on the comparison between the price elasticity of demand and that of supply

    (b) does not change

    (c) increases

    (d) decreases

16. When the government imposes a tax on a good, the decrease in the price received by producers, is generally smaller than the tax unless _____. (**There may be multiple correct answers**)

    (a) demand is perfectly elastic

    (b) demand is perfectly inelastic

    (c) supply is perfectly elastic

    (d) supply is perfectly inelastic

17. Holding other factors unchanged, when a tax on a good increases, which of the following can change in both directions (either increase or decrease)?

    (a) the quantity sold

    (b) the price paid by buyers

    (c) the deadweight loss

    (d) the tax revenues

18. The only four consumers in a market have the following willingness to pay for a good:

Buyer	Willingness to Pay
Carlos	$15
Quilana	$25
Wilbur	$35
Ming-la	$45

If there is only one unit of the good and the four buyers bid against each other for the right to purchase it, the person who bids the highest price will be able to pay that price and get the good, then consumer surplus will be

(a) $0 or slightly more.

(b) $10 or slightly less.

(c) $30 or slightly more.

(d) $45 or slightly less.

19. For each of three potential buyers of oranges, the table displays the willingness to pay for the first three oranges of the day. Assume Allison, Bob, and Charisse are the only three buyers of oranges, and only three oranges can be supplied per day.

	First Orange	Second Orange	Third Orange
Allison	$2.00	$1.50	$0.75
Bob	$1.50	$1.00	$0.60
Charisse	$0.75	$0.25	$0

The market quantity of oranges demanded per day is exactly 7 if the price of an orange, P, satisfies

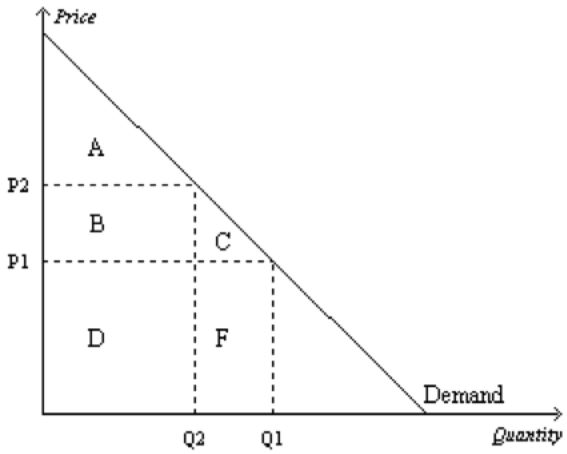
(a) $\$0.60 < P < \$0.75$.

(b) $\$0.60 < P < \$2.00$.

(c) $\$0.25 < P < \$0.75$.

(d) $\$0.25 < P < \$0.60$.

20. In this figure,



when price increases from P1 to P2, the quantity sold decreases from Q1 to Q2. Area C represents the

(a) decrease in consumer surplus that results from a downward-sloping demand curve.

(b) consumer surplus to new consumers who enter the market when the price falls from P2 to P1.

(c) increase in producer surplus when quantity sold increases from Q2 to Q1.

(d) decrease in consumer surplus to each consumer in the market when the price increases from P1 to P2.

Part II
Problems

Problem 1 (12 points)

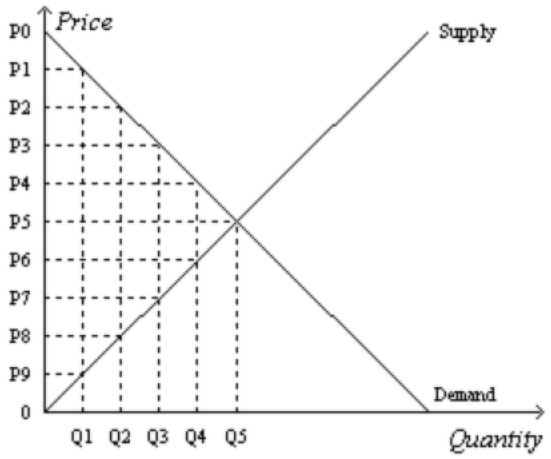
Suppose the market for widgets can be described by the following equations:

$$\text{Demand: } P = 10 - Q$$
$$\text{Supply: } P = Q - 4$$

, where P is the price in dollars per unit and Q is the quantity in thousands of units.

1. What is the equilibrium price and quantity? (2 points)
2. Suppose the government imposes a tax of \$1 per unit to reduce widget consumption and raise government revenues. What will the new equilibrium quantity be? What price will the buyer pay? What amount per unit will the seller receive? (3 points)
3. How is the burden of the tax shared between buyers and sellers? (2 points)
4. Calculate the deadweight loss of the tax, assuming that no externality exits. Be careful about the unit of deadweight loss. (2 points)
5. Suppose the government has a change of heart about the importance of widgets to the happiness of the American public. The tax is removed and a subsidy of \$1 per unit is granted to widget producers. What will the equilibrium quantity be? What price will the buyer pay? What amount per unit (including the subsidy) will the seller receive? What will be the total subsidy cost to the government? (3 points)

Problem 2 (8 points)



1. According to this figure, what is the market equilibrium price and quantity without a tax? (1 point)

2. Suppose the government imposes a tax that reduces the quantity sold in the market after tax to Q2. Write down the following quantities: (1 point each)

   (a) The price that buyers pay

   (b) The price that sellers receive

   (c) The size of the tax per unit

   (d) The tax revenue

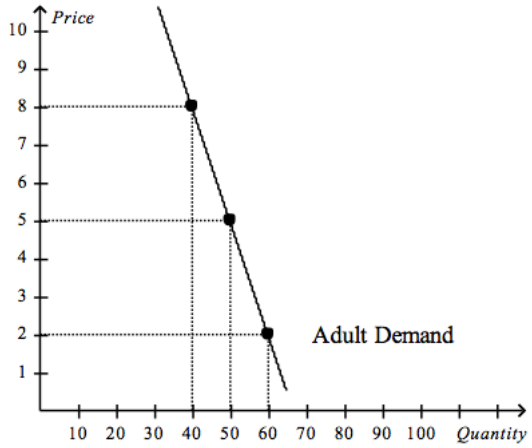
   (e) The total surplus without the tax

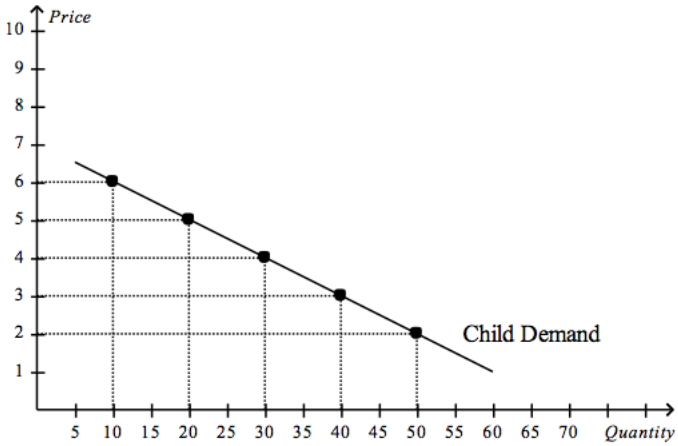
   (f) The total surplus with the tax

   (g) The deadweight loss of the tax

Problem 3 (10 points)

You own a small town movie theater. You currently charge $5 per ticket for everyone who comes to your movies. Your friend who took an economics course in college tells you that there may be a way to increase your total revenue. Given the demand curves shown, answer the following questions.





1. What is your current total revenue for both groups?[2] (3 points)

2. Use the midpoint method, calculate the elasticity of demand between the prices of $5 and $2 in the adult market. Is this elastic or inelastic? (2 points)

[2]Hint: both adults and children must accept the price you charge.

3. Use the midpoint method, calculate the elasticity of demand between $5 and $2 in the children's market. Is this elastic or inelastic? (2 points)

4. Given the graphs and what your friend knows about economics, he recommends you increase the price of adult tickets to $8 each and lower the price of a child's ticket to $3. How much could you increase total revenue if you take his advice? (3 points)

Problem 4 (10 points)

The government has decided that the free-market price of cheese is too low.

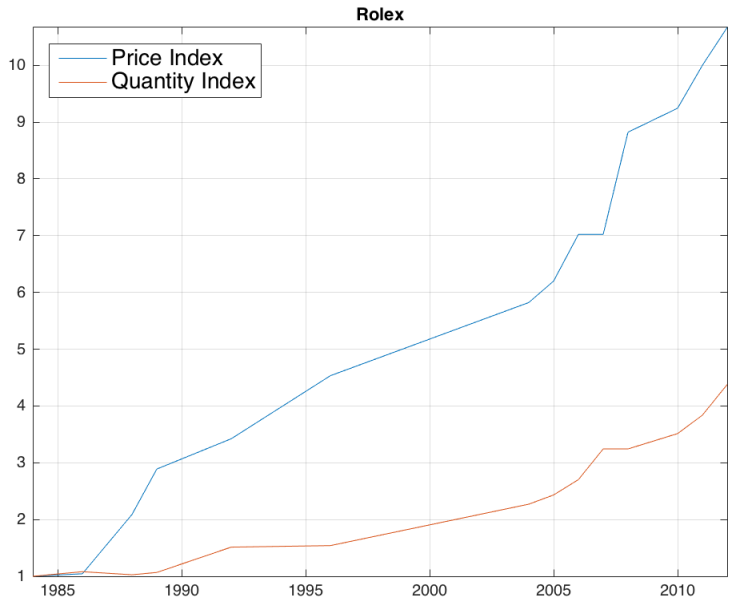
1. Suppose the government imposes a binding price floor in the cheese market. Draw a supply-and-demand diagram to show the effect of this policy on the price of cheese and the quantity of cheese sold. Is there a shortage or surplus of cheese? (3 points)

2. Producers of cheese complain that the price floor has reduced their total revenue. Is this possible? Explain. (4 points)

3. In response to cheese producers' complaints, the government agrees to purchase all the surplus cheese at the price floor. Show in your graph, what is the total revenue received by the cheese producer? What is the total expenditure of the consumer? (3 points)

Problem 5 (6 Points)

Luxury goods that serve as status symbols are sometimes called Veblen goods, named after Economist Thorstein Veblen. Because the ability to afford high-priced items signals wealth and status, people may demand a luxury good more if its price is higher. It is therefore theoretically possible for Veblen goods to violate the law of demand. Below we look at the prices and quantities sold of Rolex watches from 1984 to 2012[3].



1. Economist A thinks that the above data show the demand curve for Rolex is upward-sloping. Draw a supply and demand diagram in which the demand curve is upward-sloping and show that when this is the case, if demand does not change but supply shifts over time, it is possible for quantity sold to go up when price increases. (2 Points)

2. Economist B disagrees with Economist A and thinks that the reason we observe people buying more Rolex watches when price goes up is because people are becoming richer over time, not because demand is upward-sloping. Draw a supply and demand diagram to illustrate what Economist B means. (2 Points)

3. Can we conclude based on this data who, Economist A or B, is correct? (2 Point)

[3]The graph shows how much the price and quantity sold of Rolex watches have increased since 1984. Both price and quantity are normalized to 1 at 1984. Prices are adjusted for inflation.

Problem 6 (14 Points)

In the Seven Kingdoms of Westeros, people buy and sell Valyrian steel and wildfire. The markets for Valyrian steel and wildfire are described by the following supply and demand equations:

$$\begin{aligned} \text{Valyrian steel Demand: } & Q_D^V = 500 - 2p^V + p^W \\ \text{Valyrian steel Supply: } & Q_S^V = 10 + p^V \\ \text{Wildfire Demand: } & Q_D^W = 200 - 15p^W + 2p^V \\ \text{Wildfire Supply: } & Q_S^W = 50 + 4p^W \end{aligned}$$

, where p^V is the price of Valyrian steel, p^W is the price of wildfire, Q_D^V and Q_S^V are respectively the quantity demanded and supplied of Valyrian steel, and Q_D^W and Q_S^W are respectively the quantity demanded and supplied of wildfire.

1. Solve for the equilibrium price and quantity of Valyrian steel and wildfire. (4 Points)

2. Are Valyrian steel and wildfire substitutes, complements, or neither? (2 Points)

3. The King of Westeros wants to support wildfire producers. To do so, he imposes a price floor of 32 on wildfire. Under this policy, what would be the market prices of Valyrian steel and wildfire? How much wildfire will people buy?[4] (2 Points)

4. Suppose that instead of a price floor, the King decides to impose a per-unit tax on the sellers of Valyrian steel. Draw supply and demand diagrams to show the impact of this tax on these two markets[5]. (2 Points)

5. Out of the four groups of people – Valyrian steel buyers, Valyrian steel producers, wildfire buyers, wildfire producers – who would share the burden of this tax? Who would benefit from this tax? (2 Points)

6. If the King's goal is to increase the total revenue of wildfire producers, which one is a better policy: a price floor on wildfire, or a tax on Valyrian steel? (2 Points)

[4]Hint: Since the demand for Valyrian steel is affected by the price of wildfire, a change in wildfire price will result in a change in the equilibrium price of Valyrian steel, which in turn, will affect the demand for wildfire.

[5]Hint: A tax on Valyrian steel will change the price paid by consumers in the Valyrian steel market, which affects the demand for wildfire. A change in the equilibrium price of wildfire will in turn affect the demand for Valyrian steel.