

Midterm I—Lecture 17 (10:10-11:00)
50 minutes
Econ 1101: Principles of Microeconomics
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Write your **name**, **student ID number**, and **section number** on the answer sheet. Fill in the corresponding bubbles.

There are 30 questions. All questions are multiple choice. Each question has a single answer. Select the **best** answer for each question and fill in the corresponding bubble on the answer sheet.

Use a **Number 2** pencil to fill in your answer.

You are not permitted to use calculators.

If you finish the exam early you will not be permitted to leave early. Nor will you be permitted to open books or notes.

1. The wholesale price of electricity in the United Kingdom tends to be expensive at 3 p.m. and cheap at 3 a.m. because
 - a) Regulators require that prices vary that way.
 - b) The demand for electricity is high at 3 p.m. and low at 3 a.m.
 - c) The cost of running an oil-fueled generator is lower at 3 a.m. than at 3 p.m.
 - d) More producers participate in the auction at 3 p.m. compared to 3 a.m.

Consider the following conditions that may or may not apply about a market:

- (1) The market structure is perfect competition
 - (2) Supply is perfectly elastic
 - (3) Demand is perfectly inelastic
 - (4) There are no externalities in the market.
2. The First Welfare Theorem (also called the Adam Smith Theorem) states that the unregulated market is Pareto efficient if which of the above conditions hold?
 - a) (1)
 - b) (1) and (2)
 - c) (2) and (3)
 - d) (3) and (4)
 - e) (1) and (4)
 3. In an efficient allocation, all of the following conditions must hold **except**
 - a) Consumers with the highest willingness to pay consume
 - b) Producers with the lowest cost produce.
 - c) Industry output is maximized
 - d) Quantity is where the marginal valuation of the last unit consumed equals the marginal cost of the last unit produced
 4. Consider the widget industry. Suppose consumer income increases and as a consequence, the quantity Q^{widget} increases while the price P^{widget} remains unchanged. Which of the following is a possible explanation for why this happened?
 - a) Widgets are a normal good and the supply curve is perfectly elastic.
 - b) Widgets are an inferior good and the supply curve is perfectly inelastic.
 - c) Widgets are a luxury good and the supply curve is unit elastic
 - d) Widgets are a necessity good and the supply curve is perfectly inelastic.

5. All of the following are **true** about the possible effects of a **binding price ceiling** in a market on total surplus (compared to the free-market allocation) **except**
- Quantity is inefficiently low.
 - Widgets won't necessarily be produced by the lowest cost producers and if not total surplus decreases.
 - Widgets won't necessarily be consumed by the highest reservation consumers and if not total surplus decreases.
 - Total surplus may be reduced by consumers wasting time waiting in line.

Reservation Prices and Costs in Econland for a Widget

Name of D Person	Reservation price for one widget (dollars)	Cost to make one widget (dollars)	Name of S Person
D1	9	1	S1
D2	8	2	S2
D3	7	3	S3
D4	6	4	S4
D5	5	5	S5
D6	4	6	S6
D7	3	7	S7
D8	2	8	S8
D9	1	9	S9
D10	0	10	S10

6. The table above provides reservation prices and costs for the inhabitants of Econland. Suppose we have an allocation where D7 consumes a widget but D1 does not consume a widget. This is not Pareto efficient because
- Efficiency requires that all D people should consume.
 - Efficiency requires that no D people consume.
 - D1 could give \$2 to D7 in exchange for the widget and both would be better off.
 - D1 could give \$6 to D7 in exchange for the widget and both would be better off.
 - (c) and (d) are both correct answers
7. In an industry, (1) **demand** is **perfectly elastic** and (2) **supply** is **perfectly inelastic**. If a tax is imposed in this industry. _____ bear the entire burden of the tax and equilibrium quantity _____. (Pick an answer to fill in the blanks.)
- Buyers, decreases.
 - Buyers, is unchanged.
 - Sellers, decreases.
 - Sellers, is unchanged.

Use the following information to answer the next two questions:

Data collected in the kingdom of Karabekla reveals that a 10 percent increase in income leads to the following changes

- A 9% decrease in the quantity demanded of quidgets
- A 6% increase in the quantity demanded of pridgets
- A 20% increase in the quantity demanded of widgets

8. The income elasticity of the demand for widgets is

- a) Negative
- b) Between 0 and 1
- c) Equal to unity
- d) Greater than 1

9. We can conclude that

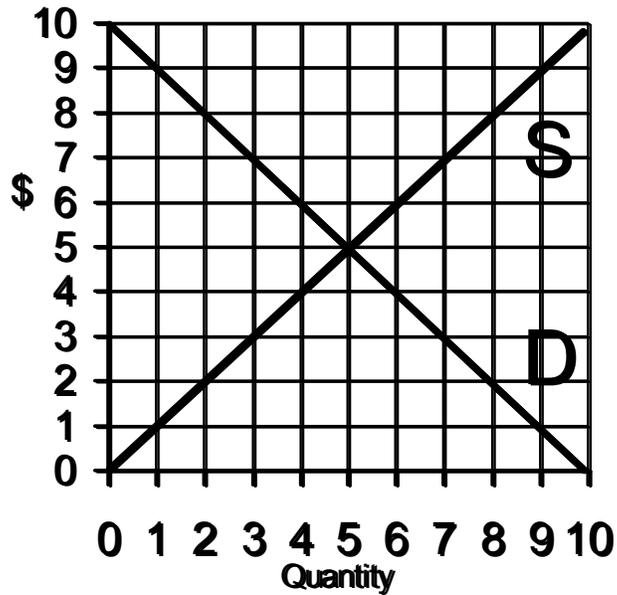
- a) Qidgets are a necessity and pridgets are a luxury good
- b) Qidgets are a normal good
- c) Pridgets and widgets are normal goods.
- d) None of the above

10. Recall the Aplia experiment with the \$30 price ceiling. If you are a buyer in this game and are playing with other students who have played this game for several rounds, the optimal strategy is to

- a) Wait until the high price books are sold, then buy a low price book at the very end, just before the bell ends the auction round.
- b) Submit an offer to buy a book for \$29.99 immediately at the start of the round.
- c) Submit an offer to buy a book for \$30 immediately at the start of the round.
- d) Submit the first bid approximately half way through the course of the auction.

11. Suppose we have an industry where demand is more elastic in the long run than the short run. Suppose the supply curve shifts up and to the left. As a result, the equilibrium price increases and equilibrium quantity decreases. Relative to the initial price and quantity, in the long run, price increases _____ and quantity decreases _____, than in the short run. (Pick an answer to fill in the blanks.)

- a) less, less.
- b) less, more.
- c) more, less.
- d) more, more.



The above diagram gives information about demand and supply for widgets in Econland. The next few questions ask you to determine the impact of a **subsidy** of \$2 in Econland. To answer the questions, it is recommended that you first fill out the table below and then use the table to answer the questions.

Variable	Free Market	\$2 Subsidy	Change
Q	5		
P^D	5		
P^S	5		
CS	12.5		
PS	12.5		
Gov't Surplus	0		
TS	25		

12. The equilibrium consumer price P^D under the \$2 **subsidy** is

- a) 3
- b) 4
- c) 5
- d) 6
- e) 7

13. The equilibrium quantity Q under the \$2 **subsidy** is
- a) 3
 - b) 4
 - c) 5
 - d) 6
 - e) 7
14. Producer surplus under the \$2 **subsidy** is
- a) 4.5
 - b) 8
 - c) 12.5
 - d) 18
 - e) 24.5
15. The **change** in consumer surplus from the \$2 **subsidy** is
- a) -8
 - b) -4
 - c) 0
 - d) 5.5
 - e) 12
16. The **change** in total surplus from the \$2 **subsidy** is
- a) -4
 - b) -2
 - c) -1
 - d) 1
 - e) 5

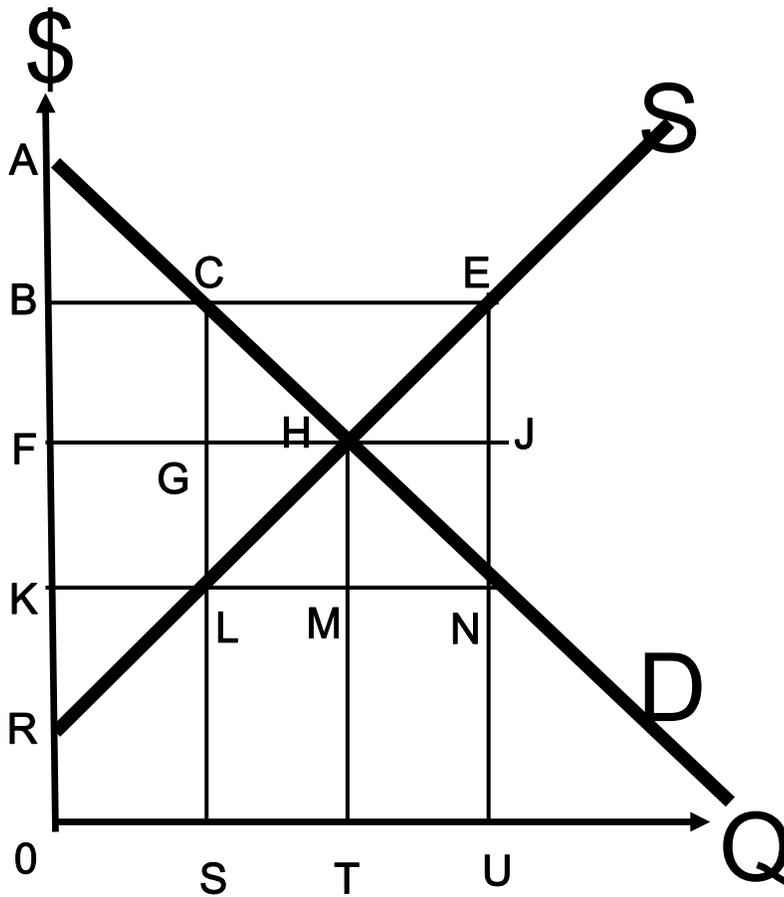
Gasoline Market in the US
June 2007 and June 2008

Time Period	Per Capita Daily Consumption of Motor Gasoline	Average Price Per Gallon in Dollars
June 2007	1.32	3.05
June 2008	1.26	4.07
Δ	-.06	1.02
Average of Both Years	1.29	3.56
$\% \Delta$	$-.05 = -.06/1.29$	$.28 = 1.02/3.56$

17. Consider the data in the above table. An estimate of the short-run elasticity of the demand for gasoline in the United States is
- .06/1.02
 - 1.29/3.56
 - 3.56/1.29
 - .05/.28
 - .28/.05
18. In estimating the elasticity of demand this way, the logic of comparing June 2007 with June 2008 is:
- There was a change in the price of a substitute over this period causing the demand curve to **shift**.
 - There were no changes in technology over this period so the change from June 2007 to June 2008 is a movement **along** a fixed supply curve.
 - The price change was small over this period and this makes it possible to more precisely estimate elasticity.
 - Consumer tastes for driving vary with the season so comparing June to June holds tastes fixed.
19. All of the following are examples of why the demand for gasoline is more elastic in the long-run than the short run **except**
- In the long run consumers can adjust fuel efficiency of the vehicles they drive but this is fixed in the short run.
 - In the long run, consumers can adjust the number of cars they own, since their original cars wear out eventually over time.
 - In the long run, individuals can adjust their commuting distance to work
 - In the long run, oil producers can adjust the amount of oil reserves they have, but these are fixed in the short run.

The next questions consider the global market for oil. For each of the following situations, determine what happens to the equilibrium quantity (Q^{oil}) and equilibrium price (P^{oil}) of *oil*.

20. The U.S. Government begins to offer subsidies on sport-utility vehicles (SUVs).
- a) $Q^{oil} \uparrow$ and $P^{oil} \uparrow$.
 - b) $Q^{oil} \downarrow$ and $P^{oil} \uparrow$.
 - c) $Q^{oil} \uparrow$ and $P^{oil} \downarrow$.
 - d) $Q^{oil} \downarrow$ and $P^{oil} \downarrow$.
21. An earthquake in Saudi Arabia shuts down all production in that country.
- a) $Q^{oil} \uparrow$ and $P^{oil} \uparrow$.
 - b) $Q^{oil} \downarrow$ and $P^{oil} \uparrow$.
 - c) $Q^{oil} \uparrow$ and $P^{oil} \downarrow$.
 - d) $Q^{oil} \downarrow$ and $P^{oil} \downarrow$.
22. Average income in China increases significantly.
- a) $Q^{oil} \uparrow$ and $P^{oil} \uparrow$.
 - b) $Q^{oil} \downarrow$ and $P^{oil} \uparrow$.
 - c) $Q^{oil} \uparrow$ and $P^{oil} \downarrow$.
 - d) $Q^{oil} \downarrow$ and $P^{oil} \downarrow$.
23. A new technology is discovered which makes it easier to pump oil from deep-sea wells.
- a) $Q^{oil} \uparrow$ and $P^{oil} \uparrow$.
 - b) $Q^{oil} \downarrow$ and $P^{oil} \uparrow$.
 - c) $Q^{oil} \uparrow$ and $P^{oil} \downarrow$.
 - d) $Q^{oil} \downarrow$ and $P^{oil} \downarrow$.
24. Two things happen: (i) Average income in China increases significantly and (ii) A new technology is discovered which makes it easier to pump oil from deep-sea wells.
- a) $Q^{oil} \uparrow$ and we can't tell what happens to P^{oil} .
 - b) $Q^{oil} \downarrow$ and we can't tell what happens to P^{oil} .
 - c) $P^{oil} \uparrow$ and we can't tell what happens to Q^{oil} .
 - d) $P^{oil} \downarrow$ and we can't tell what happens to Q^{oil} .



25. Suppose a **price floor** equal to the length OB is imposed in this market.
- There is excess supply equal to the length CE
 - There is excess demand equal to the length CE
 - There is excess supply equal to the length LM
 - There is excess demand equal to the length MN
26. Consumer surplus under the above price floor equals
- The area ANK
 - The area AHF
 - The area ACB
 - The area ACGF
 - The area ACLK

27. Producer surplus under the **price floor** depends on the rationing rule. If the producers with the lowest cost produce, producer surplus equals
- The area RKL
 - The area RFH
 - The area RFGL
 - The area RBCL
 - The area KFGL
28. Suppose the industry in question is the milk industry. A production quota system is set up and the amount of quota distributed equals the length OS. The quota can be traded at an exchange. The total market value of the quota (the price of quota times the quantity) will equal
- FGLK
 - BENK
 - CENL
 - BCLK
29. Suppose the quota is given to the milk producers. **Producer surplus** can be calculated as the surplus on the milk business (net of the opportunity cost of quota) plus surplus on the quota (the market value of quota in the question above). **Producer surplus** is higher with the quota system than the market because
- The gain BCGF in producer surplus from the quota system exceeds the loss GHL.
 - The area BER is bigger than FHR.
 - The cost BENK of the program to the government is not all deadweight loss as some of it gets shifted to producers.
 - Industry profits are distributed more equally under the quota system.
30. Adam S. owns the first widget ever talked about in an Econ class and he plans to sell it at auction to the highest bidder. The auction format is the “open outcry” variety where the auctioneer calls out prices, starting from low to high, and buyers in the audience raise their hands if they are willing to buy at the current price. Buyers can see what the other bidders are doing. Suppose the auctioneer starts the bidding at a reserve price of \$100 and raises the price at \$10 increments. Suppose three bidders show up: Jones, who is willing to pay up to \$210, Kehoe, who is willing to pay up to \$320, and Holmes, who is willing to pay up to \$450. What can be said about the outcome of this auction?
- It is possible that Holmes will not win if he goes to the auction not knowing what the others are willing to pay.
 - Holmes will win and pay \$450.
 - Holmes will win and pay no less than \$310 and no more than \$330.
 - None of the above.