

Midterm 1
60 minutes
Econ 1101: Principles of Microeconomics
October 10, 2011

Exam Form A

Name _____ Student ID number _____

Signature _____

Teaching Assistant _____ Section _____

The answer form (the bubble sheet) **and** this question form will both be collected at the end of the exam. Fill in the information above and then on the answer form, please write the following information

- **name,**
- **student ID number,**
- **recitation number**
- **Form A** (see the bottom part of the answer sheet for this bubble.)

Fill in the corresponding bubbles. Sign your name on the answer form.

You will be awarded 1.5 bonus points for filling the correct name, ID, and form number on the answer form.

There are 32 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 or to open books or notes.

1. For question 1, please fill in (a) on your bubble sheet, as this is exam form A. (We are using this question to verify the exam form.)
- a) Form A

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

2. There is no rain throughout the entire summer in the corn-growing regions.
- a) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \uparrow$.
 - b) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \uparrow$.
 - c) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \downarrow$.
 - d) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \downarrow$.
3. The price of cars that use ethanol for fuel **decreases**. (Ethanol is made out of corn.)
- a) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \uparrow$.
 - b) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \uparrow$.
 - c) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \downarrow$.
 - d) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \downarrow$.
4. Sugar prices **rise**. (Sugar and corn syrup are both used as sweeteners.)
- a) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \uparrow$.
 - b) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \uparrow$.
 - c) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \downarrow$.
 - d) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \downarrow$.
5. A new kind of corn is developed that is resistant to damage from insects.
- a) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \uparrow$.
 - b) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \uparrow$.
 - c) $Q^{\text{corn}} \uparrow$ and $P^{\text{corn}} \downarrow$.
 - d) $Q^{\text{corn}} \downarrow$ and $P^{\text{corn}} \downarrow$.
6. Two things happen: (i) sugar prices rise and (ii) a new kind of corn is developed that is resistant to damage from insects.
- a) $Q^{\text{corn}} \uparrow$ and we can't tell what happens to P^{corn} .
 - b) $Q^{\text{corn}} \downarrow$ and we can't tell what happens to P^{corn} .
 - c) $P^{\text{corn}} \uparrow$ and we can't tell what happens to Q^{corn} .
 - d) $P^{\text{corn}} \downarrow$ and we can't tell what happens to Q^{corn} .

You are the Independent System Operator (ISO) in an electricity market. You have received the bid information in the table below for a double auction. Each buyer's bid is an offer to buy one Mhw of electricity. Each seller's bid is an offer to sell one Mhw of electricity.

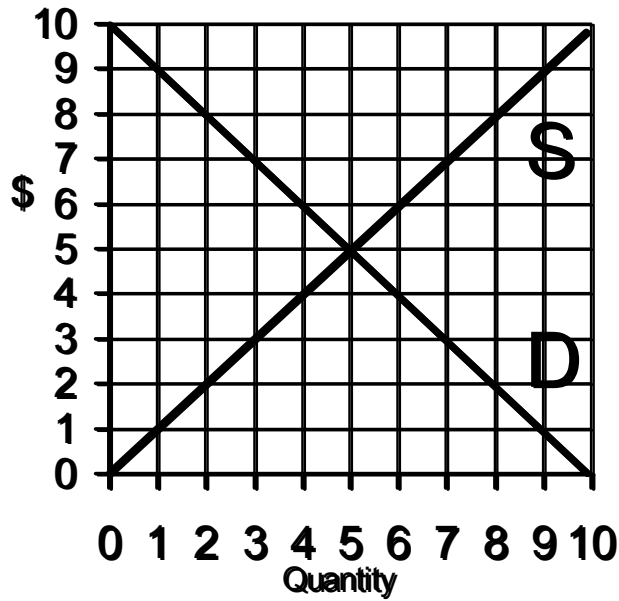
Buyers	Bid (Offer to buy in \$)	Sellers	Bid (Offer to sell in \$)
Aretha	3	Allie	3
Bill	8	Brett	14
Charles	14	Cindy	5
Dane	12	David	4
Elizabeth	5	Earl	4

7. What price clears the market?
- 3
 - 4
 - 5
 - 12
 - 14
8. In the market clearing allocation, _____ buys and _____ sells.
- Aretha, Allie
 - Charles, Brett
 - Bill, David
 - Aretha, Brett
9. Consider the widget industry. Suppose consumer income increases and as a consequence, the price P^{Widget} **increases** while the quantity Q^{Widget} **remains unchanged**. Which of the following is a possible explanation for why this happened?
- Widgets are a necessity good and the supply curve is unit elastic.
 - Widgets are a normal good and the supply curve is perfectly elastic.
 - Widgets are an inferior good and the supply curve is perfectly inelastic.
 - Widgets are a luxury good and the supply curve is unit elastic
 - none of the above.
10. In an industry, (1) **demand** is **unit elastic** and (2) **supply** is **perfectly elastic**. 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.

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

11. The table above provides reservation prices and costs for the inhabitants of Econland. Suppose we have an allocation where S2, S3, S4, S5, S6 each produce a widget and D1, D2, D3, D4, D5 each consume a widget. This is not Pareto efficient because
- Total output is higher if S1 through S10 produce and D1 through D10 consume.
 - D5 can sell his widget to D8 for \$5 and both are better off.
 - In an efficient allocation, 3 widgets are produced.
 - S7 can produce a widget and give it to D6 for \$5 and both are better off.
 - S6 can pay \$3 to S1 to outsource production of the widget to S1, and both are better off.
12. Suppose in Econland there is a **price floor** of \$7. Which of the possible alternatives are true?
- D1, D2, D3 will consume.
 - We don't know who is going to consume.
 - S1, S2, S3, S4, S5, S6, S7 will produce
 - S1, S2, S3 will produce.
 - We don't know who is going to produce
- (1) and (4)
 - (2) and (3)
 - (2) and (4)
 - (1) and (5)
 - (2) and (5)



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 **tax** of \$8 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	\$8 Tax	Change
Q	5		
P^D	5		
P^S	5		
CS	12.5		
PS	12.5		
Gov't Surplus	0		
TS	25		

13. The equilibrium consumer price P^D under the \$8 tax is
- a) 6
 - b) 7
 - c) 8
 - d) 9
 - e) 13

14. The equilibrium quantity Q under the \$8 tax is
- a) 5
 - b) 4
 - c) 3
 - d) 2
 - e) 1
15. Producer surplus under the \$8 tax is
- a) .5
 - b) 1.5
 - c) 4.5
 - d) 6
 - e) 8
16. The **change** in consumer surplus from the \$8 tax is
- a) 0
 - b) -4
 - c) -8
 - d) -12
 - e) -12.5
17. The **change** in total surplus from the \$8 tax is
- a) -2
 - b) -4
 - c) -8
 - d) -12
 - e) -16
18. Which of the following conditions for efficiency are violated on account of the tax
- (1) Condition 1 that consumption be allocated to consumers with highest willingness to pay.
 - (2) Condition 2 that production be allocated to producers with lowest cost.
 - (3) Condition 3 that output be a point where value the marginal value in consumption of the last unit is equals the marginal cost of production.
- a) (1), (2), and (3)
 - b) (1)
 - c) (2)
 - d) (3)
 - e) (1) and (2)

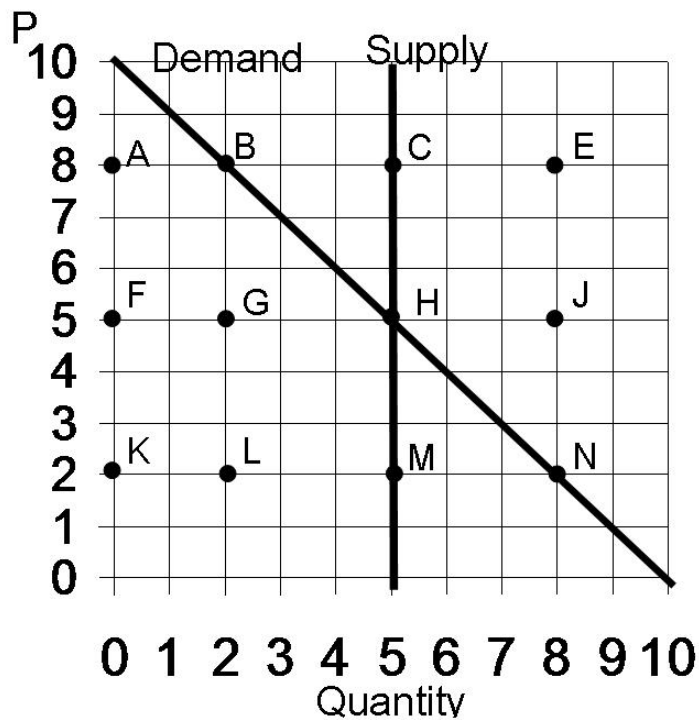
The next two questions use the same demand and supply curve in the diagram above, but consider a different policy. Suppose that a supply management policy is implemented in Econland. The government limits industry quantity to $Q = 4$. It does this by distributing 4 units total of **quota** and requiring that any firm producing output have quota equal how much the firm produces. Suppose the quota is initially distributed for free to firms in the industry and that firms are free to buy and sell quota on a **quota exchange**.

19. The equilibrium price of quota at the quota exchange (per unit of quota) equals
- a) 0
 - b) 2
 - c) 4
 - d) 6
 - e) 8
20. Taking into account that all the quota is initially allocated to widget producers, producer surplus (including any surplus from sales of quota at the quota exchange) equals
- a) 16
 - b) 8
 - c) 2
 - d) 14
 - e) 8.5
21. Suppose the widget producers have political power and can pick the level of quota set by the government. Which of the following quota levels gives the highest level of overall producer surplus (again including surplus from sales of quota at the quota exchange)?
- a) 0
 - b) 1
 - c) 3
 - d) 4
 - e) 6

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

- (1) The social pie is equitably distributed.
- (2) The market structure is perfect competition
- (3) Supply is perfectly inelastic
- (4) There are no externalities in the market.

22. The First Welfare Theorem states that the unregulated market is Pareto efficient if which of the above conditions hold?
- a) (1) and (2)
 - b) (2) and (4)
 - c) (2), (3), and (4)
 - d) (2) and (3)
 - e) (1), (2), (3), and (4)



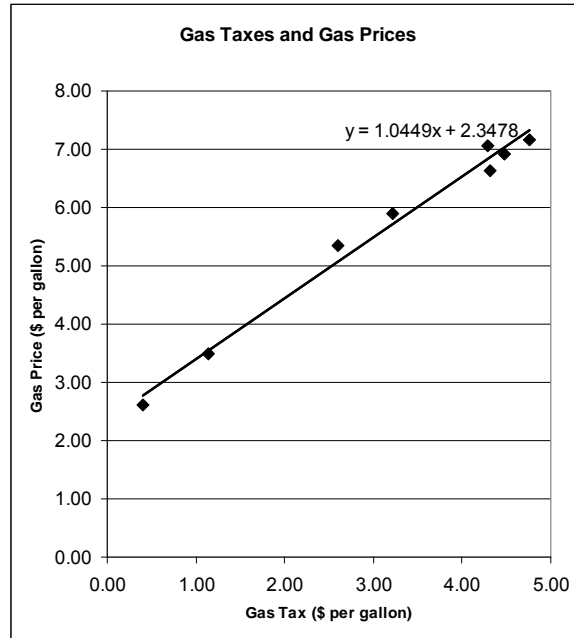
23. Demand and supply in a market are given by the above figure. When a supply curve looks like this, we say that supply
- violates the rule that the lowest cost producers produce.
 - satisfies the law of demand.
 - is perfectly elastic.
 - none of the above.
24. Suppose the government pays a subsidy of \$3 per unit in the above market. Compared to the free market, the change in producer surplus equals
- ACHF
 - AEHF.
 - FHNK.
 - FJMK
 - CEH
25. The cost to the government of the \$3 subsidy program equals
- AENK
 - CENM.
 - FJNK
 - ACHF
 - BCHG

26. Suppose that when the price of a good falls from \$11 to \$9, the quantity demanded increases from 3 units to 5 units. From this information, we can say that
- demand is elastic
 - demand is inelastic
 - demand is unit elastic
 - the income elasticity is negative
 - the income elasticity is positive

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
$\% \Delta$	$-.05 = -.06/1.29$	$.28 = 1.02/3.56$

27. Consider the data in the above table. An estimate of the short-run elasticity of the demand for gasoline in the United States is
- .28/.05
 - .05/.28
 - .06/1.02
 - 1.29/3.56
 - 3.56/1.29
28. 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.



29. The above figure plots average retail gasoline prices and gas tax rates in dollars per gallon for eight countries. Consider the following two statements and then chose the best answer.
- (1) It is evidence that consumers, not producers bear the primary burden of gas taxes.
 - (2) It is consistent with what economic theory predicts will happen to the price consumers pay when a country imposes a tax and the supply of gasoline to the country is perfectly elastic.
- a) Only (1) is true.
 - b) Only (2) is true.
 - c) (1) and (2) are both true.
 - d) (1) and (2) are both false.
30. In the U.S., on average 1.3 gallons of gasoline is consumed per person, per day, while in Norway average consumption is .3 gallons. Factors that contribute to this difference in demand include:
- a) Public transit is a substitute for using gasoline to drive a car and public transit access is better in Norway.
 - b) Gas prices are substantially higher in Norway.
 - c) Per capita income is lower in Norway.
 - d) All of the above.
 - e) Both (a) and (b).

31. All of the following are examples of why the demand for gasoline is more elastic in the long-run than the short run **except**
- a) In the long run consumers can adjust fuel efficiency of the vehicles they drive but this is fixed in the short run.
 - b) In the long run, consumers can adjust the number of cars they own, since their original cars wear out eventually over time.
 - c) In the long run, individuals can adjust their commuting distance to work
 - d) In the long run, oil producers can adjust the amount of oil reserves they have, but these are fixed in the short run.
32. Consider the following statements, which may or may not be true, about the supply management policy of the dairy industry in Canada.
- (1) The policy consists of extensive subsidies that are funded by the Canadian government.
 - (2) The policy results in a reduction of P^D , the price consumers pay for milk, compared to no government regulation.
- a) Only (1) is true.
 - b) Only (2) is true.
 - c) (1) and (2) are both true
 - d) (1) and (2) are both false.