

Midterm 1
60 minutes
Econ 1101: Principles of Microeconomics
October 6, 2014

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**
- **X.500 username** (= email without “@umn.edu”)
- **Identification Number**,
- **Section (recitation number)**
- **Form A** (in box marked “Form/Version”)

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

You will be awarded 1.5 bonus points for filling the correct name, x500, ID, and form number on the answer form.

There are 33 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 four questions consider the market for ethanol. For each of the following situations, determine what happens to the equilibrium quantity (Q^{ethanol}) and equilibrium price (P^{ethanol}) of *ethanol*.

2. The price of corn decreases. Corn is an input in the production of ethanol

a) $Q^{\text{ethanol}} \uparrow$ and $P^{\text{ethanol}} \uparrow$.

b) $Q^{\text{ethanol}} \downarrow$ and $P^{\text{ethanol}} \uparrow$.

c) $Q^{\text{ethanol}} \uparrow$ and $P^{\text{ethanol}} \downarrow$.

d) $Q^{\text{ethanol}} \downarrow$ and $P^{\text{ethanol}} \downarrow$.

3. The price of crude oil decreases.

a) $Q^{\text{ethanol}} \uparrow$ and $P^{\text{ethanol}} \uparrow$.

b) $Q^{\text{ethanol}} \downarrow$ and $P^{\text{ethanol}} \uparrow$.

c) $Q^{\text{ethanol}} \uparrow$ and $P^{\text{ethanol}} \downarrow$.

d) $Q^{\text{ethanol}} \downarrow$ and $P^{\text{ethanol}} \downarrow$.

4. Two things happen: (i) the price of corn decreases; (ii) the price of crude oil decreases.

a) $Q^{\text{ethanol}} \uparrow$ and we can't tell what happens to P^{ethanol} .

b) $Q^{\text{ethanol}} \downarrow$ and we can't tell what happens to P^{ethanol} .

c) $P^{\text{ethanol}} \uparrow$ and we can't tell what happens to Q^{ethanol} .

d) $P^{\text{ethanol}} \downarrow$ and we can't tell what happens to Q^{ethanol} .

5. Consider the widget industry. Suppose the price of a complement increases, and as a consequence, P^{Widget} **decreases while** Q^{Widget} **remains unchanged**. Which of the following statements about the widget market **must** be true?

a) Demand is perfectly elastic.

b) Supply is perfectly elastic.

c) Demand is perfectly inelastic.

d) Supply is perfectly inelastic.

e) none of the above.

6. In an industry, (1) **demand is unit elastic** (i.e., the elasticity of demand equals one) and (2) **supply is unit elastic** (i.e., the elasticity of supply equals one). Suppose a tax is imposed on the industry. Which statement is true?

a) Sellers bear the entire burden of the tax.

b) Buyers bear the entire burden of the tax.

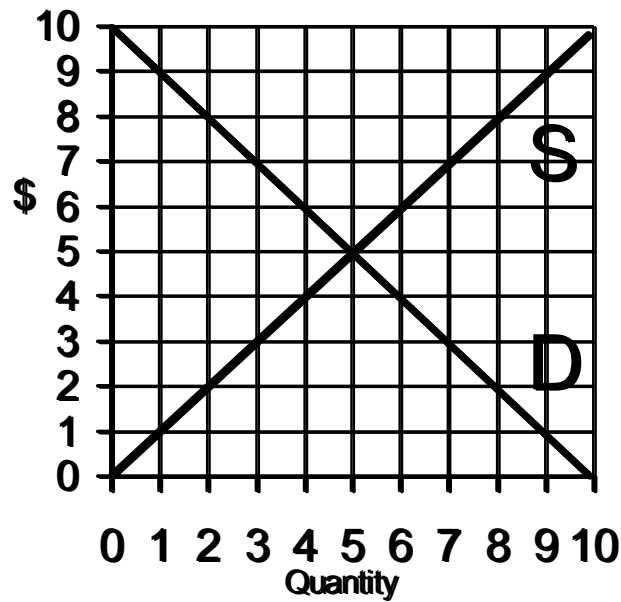
c) Buyers and sellers each bear some of the burden of the tax.

d) There is insufficient information to answer the question.

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

7. The table above provides reservation prices and costs for the inhabitants of Econland. Suppose we have an allocation where S9 produces a widget and S2 does not produce a widget. This is not Pareto efficient because
- S9 can give \$10 to S2, and S2 can make the widget instead of S9, and both are better off.
 - S9 can give \$1 to S2, and S2 can make the widget instead of S9, and both are better off.
 - S9 can give \$1.99 to S2, and S2 can make the widget instead of S9, and both are better off.
 - S9 can give \$2.01 to S2, and S2 can make the widget instead of S9, and both are better off.
 - None of the above.
8. Suppose we have an allocation where S1,S2,S3,S4,S5 produce a widget and D1,D2,D3,D4,D5 consume a widget.
- This is not Pareto efficient because we can have S9 sell to D1 for \$9, S8 sell to D2 for \$8, S7 sell to D3 for \$7, and so on up to S1 sell to D9 for \$1, and this will maximize output.
 - This is not Pareto efficient because S8 can sell a widget to D8 for \$8 and both are better off.
 - This is not Pareto efficient because S5 should outsource production to S10.
 - This is not Pareto efficient because the condition for efficient allocation of consumption is not satisfied.
 - None of the above.
9. **True of False:** In any Pareto efficient allocation, producer surplus must equal consumer surplus.
- True
 - False



The above diagram gives information about demand and supply for widgets in Econland.

10. **True of False:** In the unregulated market equilibrium, excess demand must be zero.
- True
 - False
11. Suppose the market is currently unregulated. Consumer surplus equals
- 5
 - 10.5
 - 12.5
 - 16
 - 25
12. Suppose the government offers a **subsidy** of \$6 per widget. The equilibrium quantity with the subsidy is
- 2
 - 6
 - 7
 - 8
 - 10
13. The total government expenditure on a program with a \$6 **subsidy** is
- 12
 - 36
 - 48
 - 60
 - 80

14. The change in total surplus (deadweight loss) of the \$6 **subsidy** program compared to the unregulated market equals
- a) -1
 - b) -2
 - c) -4
 - d) -8
 - e) -9
15. Suppose instead of the subsidy, there is a **price ceiling** of \$2. Excess demand in the market equals
- a) 0
 - b) 2
 - c) 4
 - d) 6
 - e) 8
16. Suppose when the **price ceiling** is \$2 that rationing is **perfectly inefficient**. Consumer surplus equals
- a) 1
 - b) 2
 - c) 4
 - d) 10
 - e) 14
17. Suppose instead of a price ceiling, there is a **price floor** of \$2. Consumer surplus equals
- a) 0
 - b) 4
 - c) 12.5
 - d) 25
 - e) 32
18. Finally, suppose instead of all the policies listed above, there is a **cap and trade** policy that caps the total amount of quota at 4 units. The equilibrium price of one unit of quota at the quota exchange equals
- a) 1
 - b) 2
 - c) 3
 - d) 4
 - e) 5

19. Which statement is true about government intervention in the dairy industry in Canada?
- a) There is a government subsidy for milk
 - b) There is a price ceiling on milk.
 - c) There is a tax on milk that is rebated back to farmers.
 - d) There is a cap and trade program for milk.
 - e) None of the above.

20. Consider the following conditions that may or may not apply about a market
- (1) There are no externalities in the market.
 - (2) Demand elasticity and supply elasticity are the same.
 - (3) The market structure is perfect competition
 - (4) A subsidy is set to maximize output

The First Welfare Theorem states that the unregulated market is Pareto efficient if which of the above conditions hold?

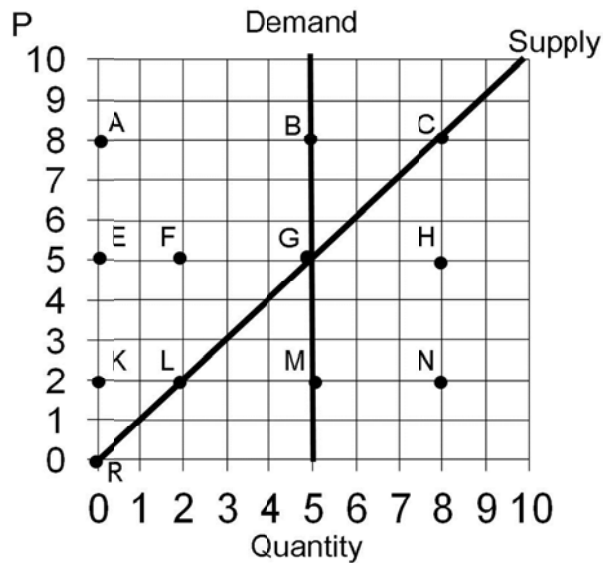
- a) (2) and (3)
 - b) (2) and (4)
 - c) (1) and (4)
 - d) (1) and (3)
 - e) (3) and (4)
21. Suppose that when the price of a good falls from \$11 to \$9, the quantity demanded increases from 3 units to 5 units. From this information, we can say that
- a) the good must be inferior
 - b) demand is elastic
 - c) demand is inelastic
 - d) demand is unit elastic
 - e) the income elasticity is positive
22. To estimate the long-run demand elasticity of gasoline, we use data on gasoline consumption and prices from US and Norway in 2007. On account of what factor (or factors) would this approach tend to overestimate the long-run elasticity?
- a) Higher gas taxes in Norway compared to the U.S. are a recent phenomenon, so the calculation may be closer to a short-run elasticity than a long-run elasticity.
 - b) Public transit access, a substitute, is better in Norway.
 - c) Both (a) and b)
 - d) None of the above

23. To calculate the short-run demand elasticity in the US gasoline market, we use data on gasoline demand and prices in June 2007 and June 2008. Factor(s) that we are holding fixed by picking these dates include:
- The seasonal pattern of demand.
 - Gasoline supply in the market
 - Both (a) and (b)
 - Neither (a) or (b)
24. From gas consumption data and income data of various countries, we noticed a pattern where the richest European countries consume the most gasoline, this makes sense since gasoline is a(n) _____ good, and if we expect income to increase substantially in the near future in China, their demand for gasoline will _____.
- inferior, decrease
 - inferior, increase
 - normal, decrease
 - normal, increase
 - none of the above

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 unit of electricity. Each seller's bid is an offer to sell one unit of electricity.

Buyers	Bid (Offer to buy in \$)	Sellers	Bid (Offer to sell in \$)
Aretha	20	Allie	17
Bill	17	Brett	5
Charles	20	Cindy	19
Dane	19	David	17
Elizabeth	21	Earl	20

25. What price clears the market?
- 20
 - 17
 - 19
 - 5
 - 21
26. In the market clearing allocation, _____ buys and _____ sells.
- Aretha, Earl
 - Aretha, Brett
 - Bill, Allie
 - Dane, Earl



27. In regards to the above figure, which of statement is true?
- a) **Demand** is perfectly **inelastic**. An example is the demand for Aplia in Econ 1101
 - b) **Demand** is perfectly **elastic**. An example is the demand for insulin.
 - c) **Supply** is perfectly **elastic**. An example is the supply of water.
 - d) **Supply** is perfectly **inelastic**. An example is the supply of diamonds.
 - e) None of the above
28. In the above figure, **producer surplus** in an unregulated market equals
- a) ACR
 - b) EGR
 - c) EHNK
 - d) EGLK
 - e) ABMK
29. If price equals \$8 in the above market there is excess supply. Suppose the government buys all the excess supply, to keep price at \$8. How much will the government spend on the program?
- a) \$8
 - b) \$16
 - c) \$24
 - d) \$32
 - e) \$40
30. Suppose instead of the above government program, a **tax** of \$3 per widget is imposed in the above market. **Government tax revenue** equals what in the above figure?
- a) EHNK
 - b) ACGE
 - c) EGLK
 - d) ABGE
 - e) ACHE

31. Which of the following statements is true regarding the **\$3 tax** in the market illustrated by the graph in the previous page?
- a) The deadweight loss of the tax is greater than the producer surplus.
 - b) Deadweight loss is zero.
 - c) Deadweight loss is given by BCG
 - d) Deadweight loss is given by GML
 - e) The sellers bear the entire burden of the tax.
32. Suppose that fine dining is a luxury good and imagine your income increases. Which statement is the most accurate?
- a) your total spending on fine dining goes down
 - b) the quantity of fine dining goes down.
 - c) the share of income you spend on fine dining decreases
 - d) the share of income you spend on fine dining increases
 - e) not enough information
33. In Econland, we defined a **head tax** as a fixed levy on every resident that did not depend upon whether someone bought or sold a widget. Choose the best answer below.
- a) A head tax is a progressive tax because individuals with high incomes pay a larger share of their income in tax.
 - b) If the number of residents in Econland does not depend on the level of the head tax, then there is no dead weight loss from the tax.
 - c) A head tax is **less** efficient than a widget tax, precisely because widgets respond to taxes, but heads do not.
 - d) None of the above.