

Midterm 2
60 minutes
Econ 1101: Principles of Microeconomics
November 12, 2012

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 and ID on the answer form.

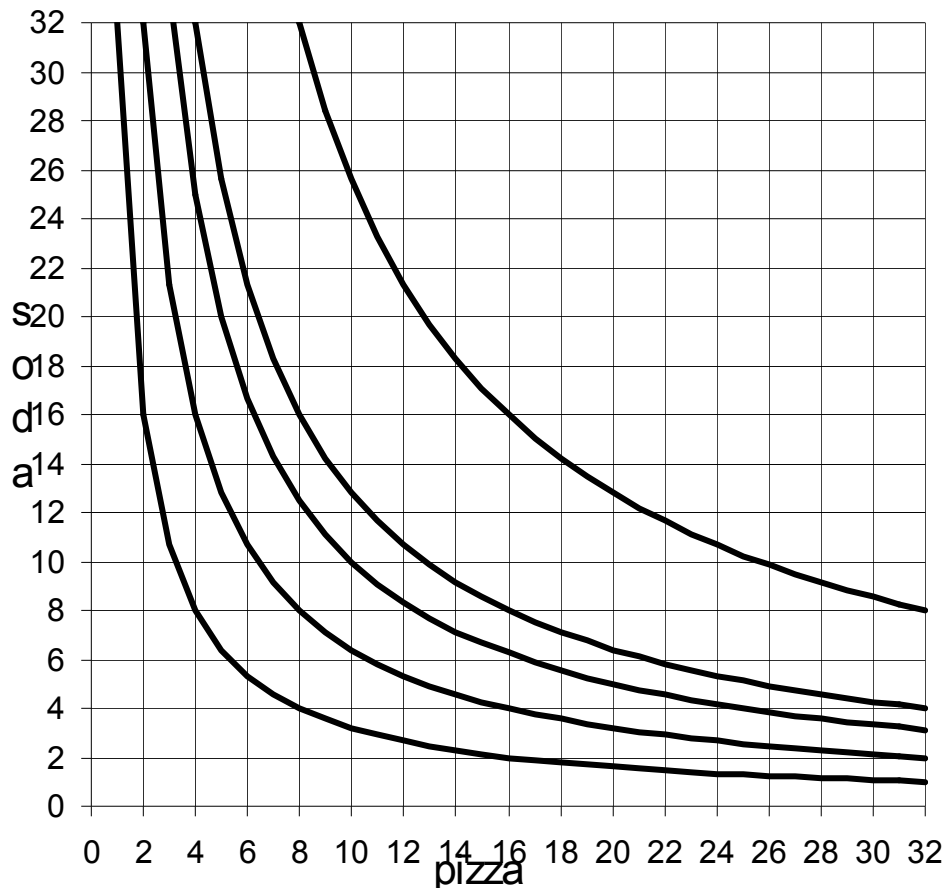
There are 35 questions. All questions are multiple choice. Each question has a single answer. Select the **best** answer for each question and fill in the corresponding bubble on the answer sheet.

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

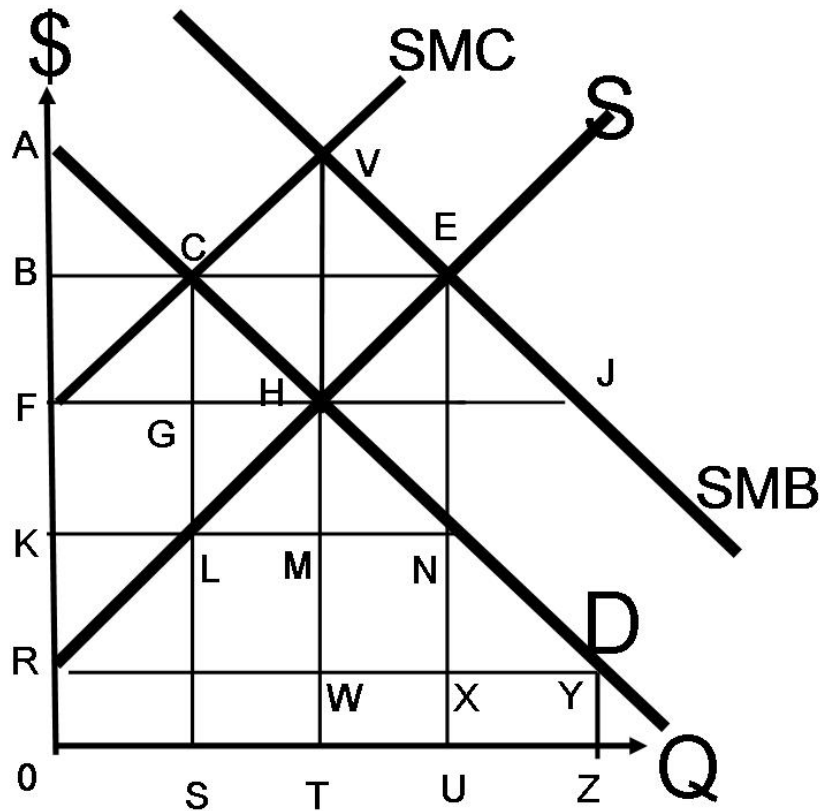
The questions on this page and the next page refer to the graph below. Wolverine consumes pizza and soda and the graph illustrates his indifference curves.



2. From Wolverine's indifference curves, we can determine that Wolverine is indifferent between having (8 pizzas, 8 sodas) and
 - a) (8 pizzas, 6 sodas)
 - b) (32 pizzas, 6 sodas)
 - c) (16 pizzas, 2 sodas)
 - d) (8 pizzas, 12 sodas)
 - e) (4 pizzas, 16 sodas)

3. Suppose Wolverine has an income of \$40, that $P^{\text{Pizza}} = \$2$, and that $P^{\text{Soda}} = \$2$. Draw Wolverine's budget constraint in the above figure. From this we can see that the opportunity cost of one more slice of pizza equals
 - a) $\frac{1}{2}$ soda
 - b) 1 soda
 - c) 2 sodas
 - d) 3 sodas
 - e) 4 sodas

4. At this income and prices of soda and pizza, the optimal consumption bundle for Wolverine is
- (4 pizza, 8 sodas)
 - (4 pizza, 16 sodas)
 - (10 pizza, 10 sodas)
 - (16 pizza, 4 sodas)
 - (20 pizza, 0 sodas)
5. Suppose Wolverine's income rises to \$64. The **change** in Wolverine's demand for pizza from the change in income equals
- 0
 - 2
 - 4
 - 6
 - 8
6. Suppose Wolverine initially has an income of \$40, and the prices are $P^{\text{Pizza}}=\$2$ and $P^{\text{Soda}}=\$2$. Suppose there is inflation and Wolverine's income doubles **and** both prices double. The **change** in Wolverine's demand for pizza from the doubling of prices and income is
- 4
 - 2
 - 0
 - 2
 - 4
7. Suppose instead Wolverine initially has an income of \$32 and the initial prices are $P^{\text{Pizza}}=\$4$ and $P^{\text{Soda}}=\$2$. Then the price of pizza falls to $P^{\text{Pizza}}=\$1$, while the price of soda remains unchanged. The substitution effect of the price change increases the demand for pizza by how many units?
- 0
 - 1
 - 2
 - 4
 - 6
8. Regarding the effect of the decrease of the price of pizza in the previous question, which of the following statements are true?
- The substitution effect and the income effect on the demand for pizza go in the **same** direction.
 - The substitution effect and the income effect on the demand for pizza go in the **opposite** direction.
 - The substitution and income effects exactly cancel out and the net effect of the price decrease on the demand for pizza is zero.
 - None of the above.

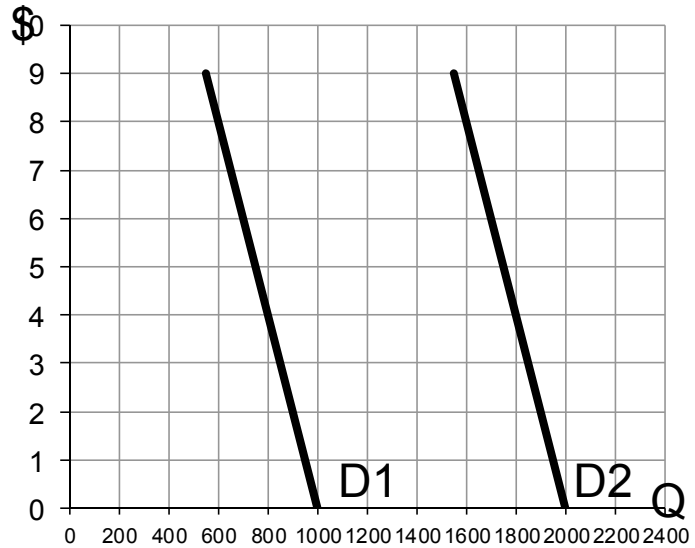
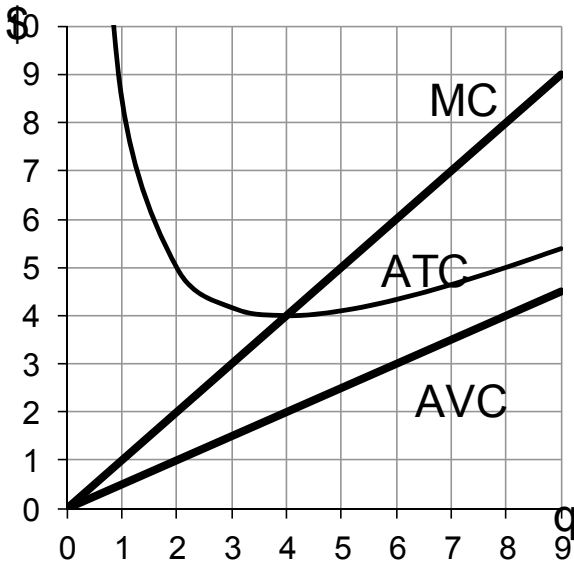


9. Suppose there is an industry that has **two** externalities. There is a **negative externality** on the production side, so the social marginal cost (SMC in the figure) exceeds private marginal cost (S in the figure). There is a **positive externality** on the consumption side so the social marginal benefit (SMB in the figure) exceeds private marginal benefit (D in the figure). The market equilibrium quantity equals _____ and the socially efficient quantity equals _____ (fill in the blanks)
- T, U
 - T, S
 - S, S
 - T, T
 - U, U
10. The policy that results in the socially efficient quantity is
- a subsidy of EN.
 - a tax of zero and a subsidy of zero.
 - a tax of HT.
 - a subsidy of VH.
 - a tax of CL.

11. Under what assumptions will the long-run supply curve for the widget industry be perfectly elastic (i.e. perfectly flat)?

- (i) The same technology is available to all firms.
 - (ii) The average total cost is falling (economies of scale) over the entire range of Q.
 - (iii) There are no barriers to entry in the industry.
 - (iv) Input prices do not change as the industry expands
 - (v) The long-run demand curve is perfectly inelastic.
- a) (i) and (ii)
 - b) (iii) and (iv)
 - c) (i), (iii), and (iv)
 - d) (ii), (iii), and (v)
 - e) (i), (ii), (iv), and (v)

Suppose the required assumptions from above hold for the widget industry. Each widget firm has the cost structure illustrated in the left graph below. The right graph illustrates two different possible demand curves, D1 and D2.



12. Fixed cost equals

- a) 2
- b) 4
- c) 6
- d) 8
- e) 10

13. If the price equals 8, resulting maximum profit equals
- a) 0
 - b) 8
 - c) 16
 - d) 24
 - e) 32

For the next four questions, assume demand is D1 and the industry is in **long-run** equilibrium.

14. The price P^{LR} is

- a) 1
- b) 2
- c) 3
- d) 4
- e) 8

15. Long-run output per firm q^{LR} equals

- a) 2
- b) 4
- c) 6
- d) 7
- e) 8

16. Long-run industry quantity Q^{LR} equals

- a) 800
- b) 1000
- c) 1200
- d) 1400
- e) 1600

17. Long-run number of firms N^{LR} equals

- a) 400
- b) 250
- c) 200
- d) 250
- e) 300

18. Suppose the industry is initially in long-run equilibrium at demand D1 and the number of firms equals the number in the previous question. Demand then shifts to D2. In the **short-run**, the equilibrium price will be

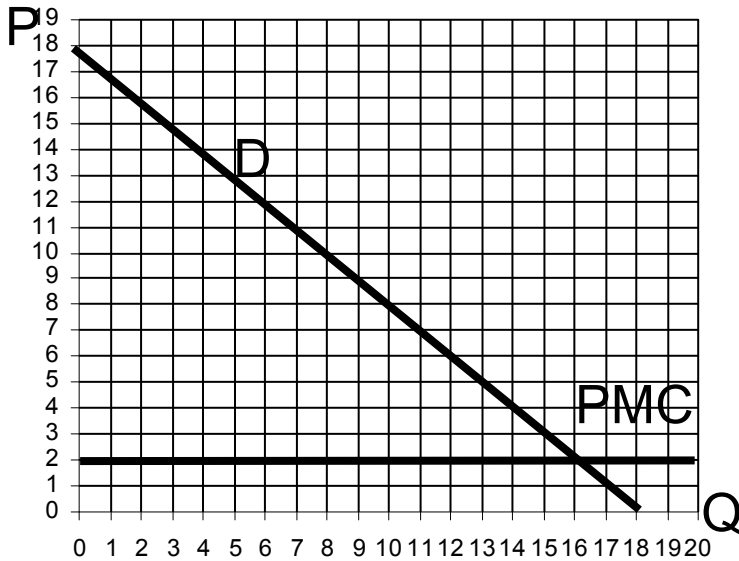
- a) 4
- b) 5
- c) 6
- d) 7
- e) 8

19. When demand shifts like in the previous question, price changes _____ in the short run than the long run, and quantity changes _____ in the short run than the long run.
- a) more, more
 - b) more, less
 - c) less, more
 - d) less, less

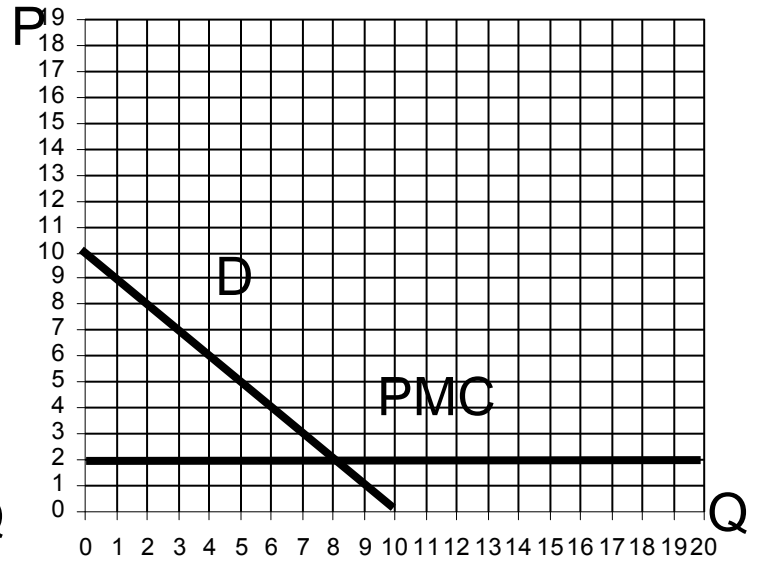
Name	Willingness to Pay
D1	6
D2	4
D3	2
D4	0

20. In Econland, the willingness-to-pay for a lighthouse is given by the table above. Suppose that a light-house is nonrivalrous in consumption and nonexcludable. It is socially efficient to build the lighthouse if and only if the cost is no higher than
- a) 0
 - b) 2
 - c) 6
 - d) 10
 - e) 12
21. Oliver and James both work 10 hours a day. In an hour, Oliver can make 4 olives or 1 unit of jam. In an hour, James can make 5 olives or 10 units of jam. _____ has an **absolute** advantage in making olives and _____ has a **comparative advantage** in making olives
- a) Oliver, Oliver
 - b) Oliver, James
 - c) James, Oliver
 - d) James ,James
22. The opportunity cost for Oliver to make one more olive equals _____, and this equals the slope of the _____.
- a) 4 jam, indifference curve
 - b) 4 jam, production possibility frontier
 - c) $\frac{1}{4}$ jam, indifference curve
 - d) $\frac{1}{4}$ jam, production possibility frontier
23. The source of gains of trade between Oliver and James is that trade allows each to exploit increasing returns.
- a) True
 - b) False

Rich Country



Poor Country



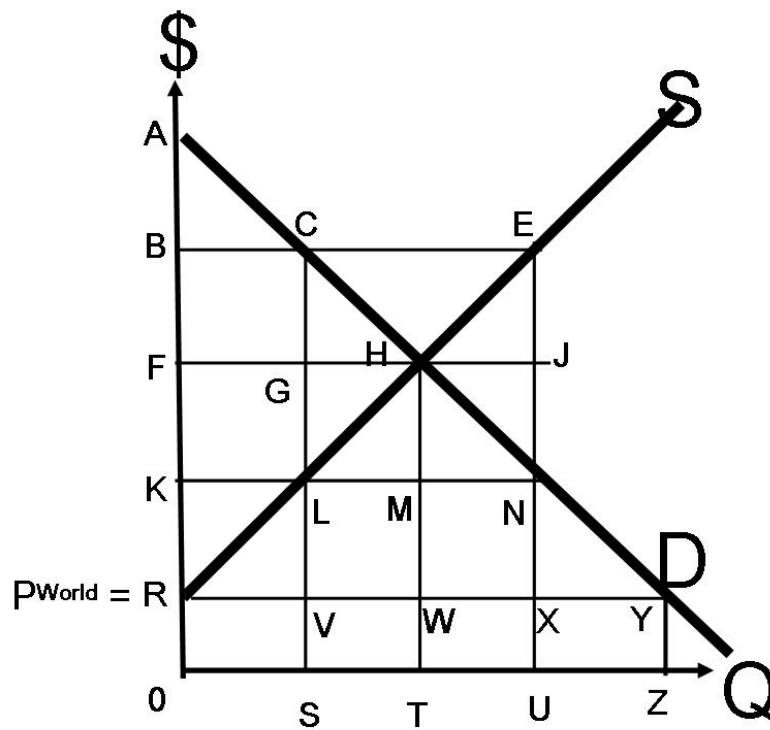
The next four questions refer to the above graphs and the following scenario:

There are two countries, the rich country and the poor country. The graphs above illustrate the demand for oil in both countries. Suppose the private marginal cost for oil is \$2 a gallon and that there is perfect competition in the oil market. Then with no government intervention, the market price of oil is \$2 a gallon. You can see in the above graphs that in this case, the rich country consumes 16 gallons and the poor country 8 gallons. Total world consumption is then 24 gallons in the free market allocation. (There are no other countries.)

Suppose science shows world consumption needs to be cut by **25 percent**, from 24 to 18 gallons, to avoid a catastrophe. The questions discuss various policies that will attain this goal.

24. Suppose the two countries agree to each cut consumption by 25 percent and each country sets a tax on oil to do it. What does the tax on oil in the poor country have to be, to cut consumption from 8 to 6 gallons in the poor country?
- 6
 - 2
 - 8
 - 4
 - 10
25. What does the tax on oil in the rich country have to be, to cut consumption from 16 to 12 gallons in the rich country?
- 4
 - 8
 - 12
 - 6
 - 10

26. Suppose that instead of each country setting their own tax rates, the same tax on oil is imposed in both countries. What does this same tax have to be in order that total world consumption of oil decrease from 24 to 18 gallons?
- a) 3
 - b) 4
 - c) 8
 - d) 12
 - e) 10
27. Suppose that instead of taxes, a cap and trade system is set up. Total world consumption of oil is capped at 18, and 12 tradable allowances are given to consumers in the rich country, while 6 tradable allowances are given to consumers in the poor country. The equilibrium price of one allowance will be
- a) 6
 - b) 8
 - c) 4
 - d) 3
 - e) 2
28. Barack and Mitt both consume bacon and eggs for breakfast every morning. Barack only cares about “servings,” where one serving is one egg and two slices of bacon. Mitt cares about the total grams of protein he consumes, where one egg gives him 7 grams and one slice of bacon gives him 3 grams. Barack’s preferences are _____ and Mitt’s preferences are _____
- a) Perfect substitutes, fixed proportions (perfect complements)
 - b) Decreasing marginal rate of substitution, perfect substitutes
 - c) Fixed proportions (perfect complements), perfect substitutes
 - d) Fixed proportions (perfect complements), decreasing marginal rate of substitution
 - e) Decreasing marginal rate of substitution, decreasing marginal rate of substitution
29. If the price of eggs falls, Barack will purchase more eggs. This increase in demand is
- a) due entirely to a substitution effect
 - b) a combination of a substitution effect and an income effect
 - c) due entirely to an income effect
 - d) none of the above



The above graph illustrates the supply and demand for widgets in Econland. Widgets can be obtained in world markets at a price $P^{\text{World}} = R$ as illustrated. Suppose initially there is free trade. Then a **tariff** equal to the length RK is imposed.

30. The tariff revenue collected in Econland will equal
- BENK
 - KNYR
 - LMWV
 - LNXY
 - LHN
31. The **change** in Econland Surplus (the total of producer and consumer surplus) from the imposition of the tariff equals (minus) the area
- AHF + RFH
 - RLNY
 - CHL
 - RLV+NYX
 - CHL+ENH
32. A import quota equal to the length LN would have the same effect on consumer surplus in Econland, as the tariff given above.
- True
 - False
 - Note enough information
33. If the world price P^{World} were to fall to zero, in this case Econland would be better off with autarky.
- True
 - False

34. Sally consumes food and education. The price of food and education are both \$10 per unit. However, there is a government subsidy program where Sally gets \$5 back for every food unit she purchases. Thus, net of the subsidy, her effective food price is \$5 per unit. Suppose that under this arrangement, she buys 20 units of food and 10 units of education. The program costs the government \$100 (= \$5 times 20 food units). Suppose the government is considering a new program that would just give \$100 cash to Sally.
- a) If the government gives \$100 cash instead of the \$5 subsidy, then Sally will increase her purchases to **more** than 20 units of food.
 - b) Sally's consumption will remain at 20 units of food and 10 units of education, because this consumption bundle is on her budget constraint, and the budget constraint condition is all that needs to be checked for the consumer optimum.
 - c) If, on account of the change in program to a \$100 cash payment, Sally ends up buying less than 20 units of food, then she will be better off under the new program.
 - d) None of the above.
35. The stock of ocean fish is a common resource that gives rise to what is sometimes called the "Tragedy of the commons." This is because the stock of ocean fishing stocks is
- a) nonrivalrous in consumption and excludable.
 - b) nonrivalrous in consumption and nonexcludable.
 - c) rivalrous in consumption and excludable.
 - d) rivalrous in consumption and nonexcludable.