

Midterm 2
60 minutes
Econ 1101: Principles of Microeconomics
November 10, 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

1. **NAME**
2. **X.500 username** (= email without "@umn.edu")
3. **Identification Number**,
4. **Section (recitation number)**
5. **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.

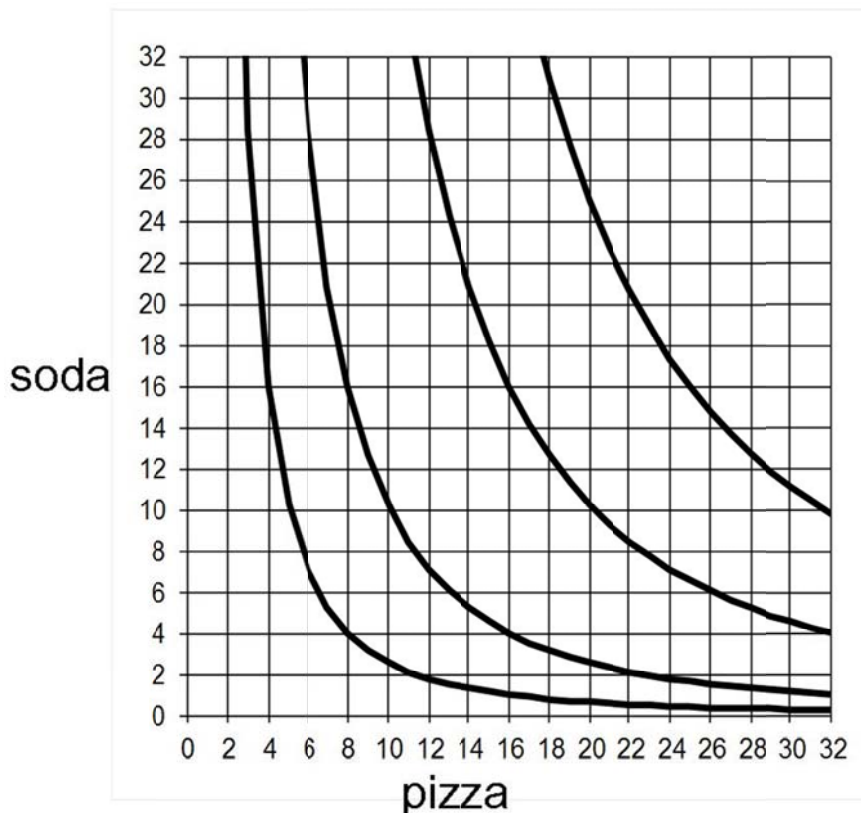
Use a **Number 2** pencil to fill in your answer.

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



2. From Terrapin's indifference curves, we can determine that Terrapin is indifferent between having (10 pizzas, 10 sodas) and

- a) (8 pizzas, 12 sodas)
- b) (8 pizzas, 22 sodas)
- c) (6 pizzas, 6 sodas)
- d) (32 pizzas, 4 sodas)
- e) (24 pizzas, 2 sodas)

3. Suppose Terrapin has an income of \$60, that $P^{\text{Pizza}} = \$4$, and that $P^{\text{Soda}} = \$2$. Draw Terrapin'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

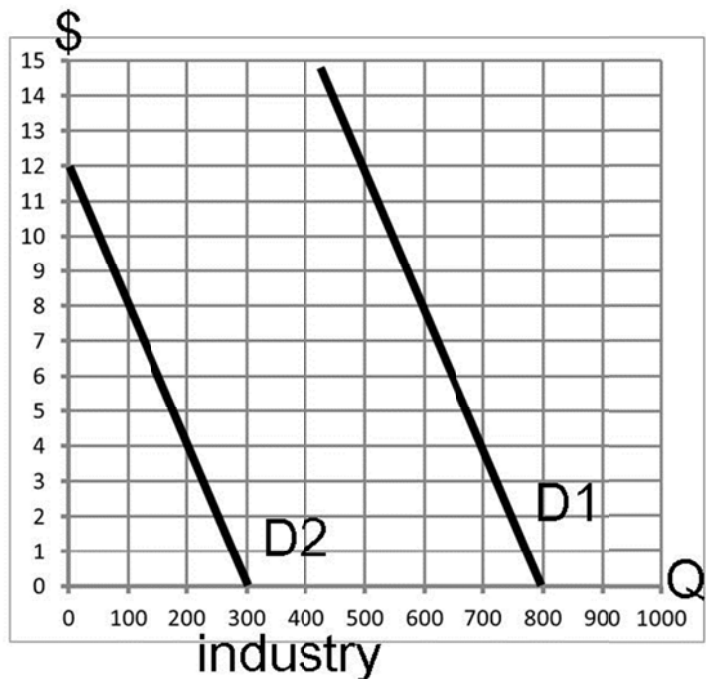
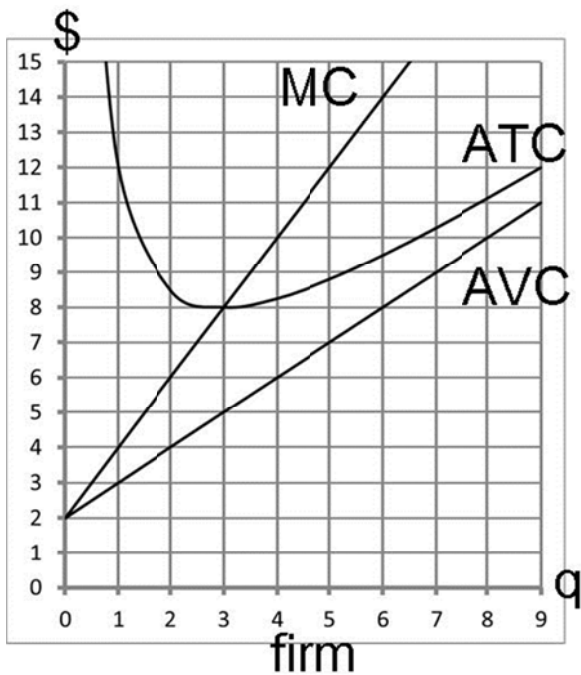
4. At this income and prices of soda and pizza, the optimal consumption bundle for Terrapin is
- (7.5 pizza, 15 sodas)
 - (4 pizza, 22 sodas)
 - (15 pizza, 0 sodas)
 - (10 pizza, 10 sodas)
 - (14 pizza, 2 sodas)
5. Suppose the price of pizza falls from \$4 to \$2. The **change** in the demand for pizza equals
- 0
 - 4
 - 8
 - 10
 - 12
6. When the pizza price falls from \$4 to \$2, what can we say about the substitution and income effects on the demand for pizza?
- They are both positive, and the substitution effect is bigger than the income effect.
 - They are both positive, and the substitution effect is less than the income effect.
 - The substitution effect is negative and the income effect is positive.
 - The substitution effect is positive and the income effect is negative.
 - The substitution effect is zero and the income effect is negative.
7. When the price of pizza falls from \$4 to \$2, at the new optimal consumption bundle, the marginal rate of substitution will equal _____ (soda for pizza)
- 0
 - .5
 - 1
 - 2
 - 4
8. Go back to the beginning when the price of pizza is $P^{\text{Pizza}}=\$4$ (and $P^{\text{Soda}}=\$2$ and income is \$60). Suppose Terrapin wins a prize where he can pick between lowering his pizza price to $P^{\text{Pizza}}=\$2$ (for as many slices as he wants to buy) or increasing his income by \$2 to \$62. Which of the following is true?
- He prefers a \$2 price cut per pizza slice over a \$2 income increase
 - He prefers a \$2 income increase over a \$2 price cut.
 - He is indifferent between the two prizes.
 - There is not enough information to answer this question.

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

- (i) Marginal cost is greater than average total cost at every quantity level.
- (ii) The same technology is available to all firms.
- (iii) There are no barriers to entry in the industry.
- (iv) The supply curve has unit elasticity
- (v) Input prices do not change as the industry expands

- 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.



10. Fixed cost equals

- a) 9
- b) 5
- c) 8
- d) 12
- e) 15

For the next four questions, assume demand is **D1** and the industry is in **long-run** equilibrium. (Note D1 is the demand curve on the **right**.)

11. The price P^{LR} is
 - a) 8
 - b) 5
 - c) 12
 - d) 4
 - e) 6

12. Long-run output per firm q^{LR} equals
 - a) 2
 - b) 3
 - c) 4
 - d) 5
 - e) 6

13. Long-run industry quantity Q^{LR} equals
 - a) 500
 - b) 700
 - c) 300
 - d) 400
 - e) 600

14. Long-run number of firms N^{LR} equals
 - a) 50
 - b) 100
 - c) 150
 - d) 200
 - e) 300

15. 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

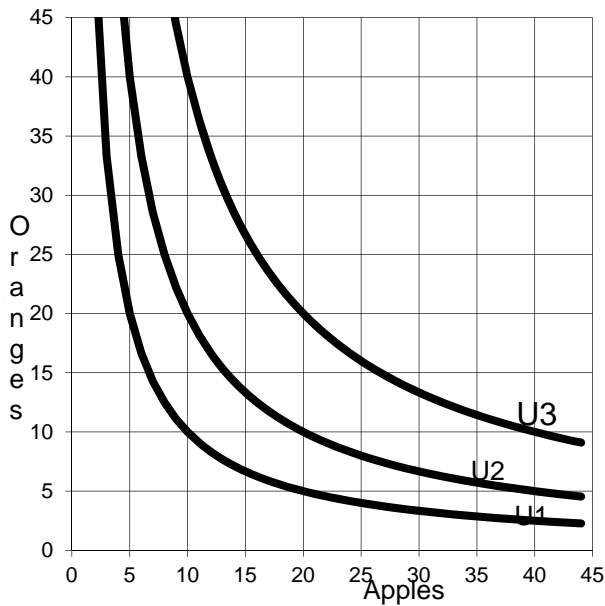
16. Continuing the previous question, after demand shifts to D2, in the short run, the profit of each firm will be
 - a) -2
 - b) -4
 - c) -8
 - d) 4
 - e) 9

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

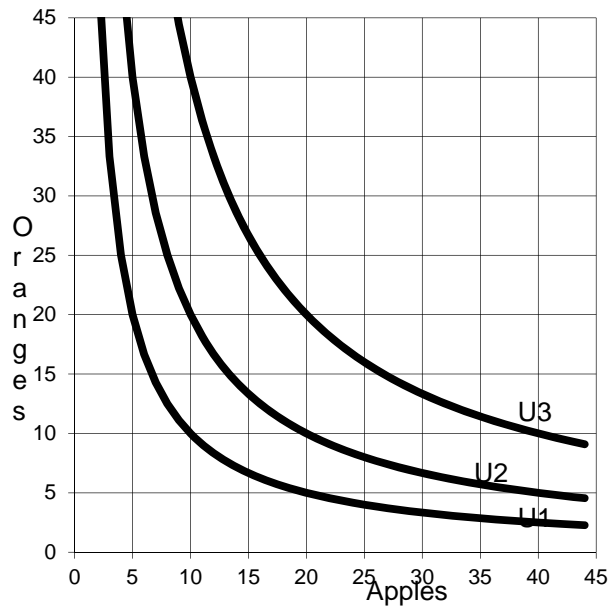
Name	Willingness to Pay
D1	7
D2	3
D3	1
D4	0

18. In Econland, the willingness-to-pay for a national park is given by the table above. Suppose that a national park is nonrivalrous in consumption and nonexcludable. It is socially efficient to build the national park if and only if the cost is no higher than
- a) 6
 - b) 2
 - c) 20
 - d) 11
 - e) 7
19. Suppose Econland is initially in autarky. Then after it opens up to trade, widget producers in Econland become better off while widget consumers in Econland become worse off. After Econland leaves autarky,
- a) it must be using an import quota on widgets.
 - b) it must be using a tariff on imported widgets.
 - c) it must be exporting widgets.
 - d) None of the above.

Robinson works 5 hours a day. He can make 8 apples per hour or 2 oranges per hour. Friday works 10 hours a day. He can make 1 apple per hour or 4 oranges per hour. The figures below show the indifference curves for Robinson and Friday.



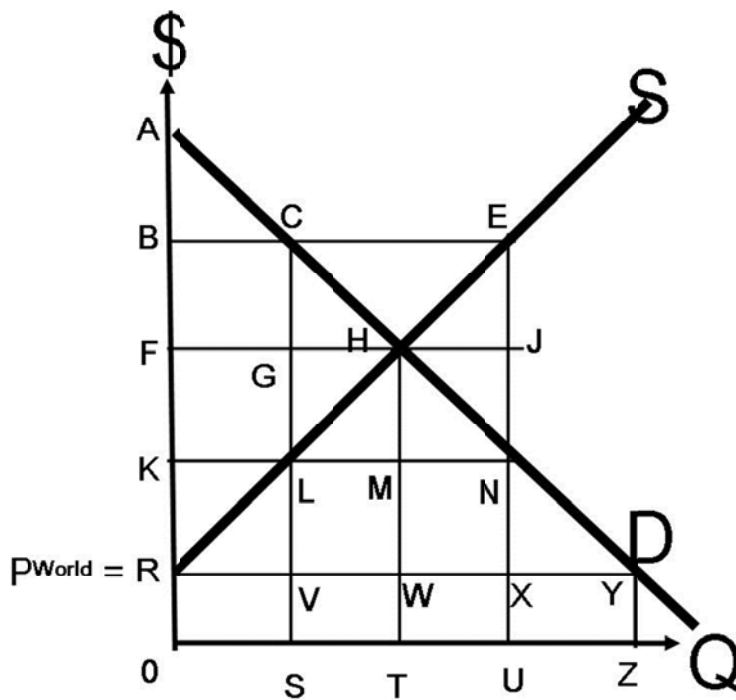
Robinson



Friday

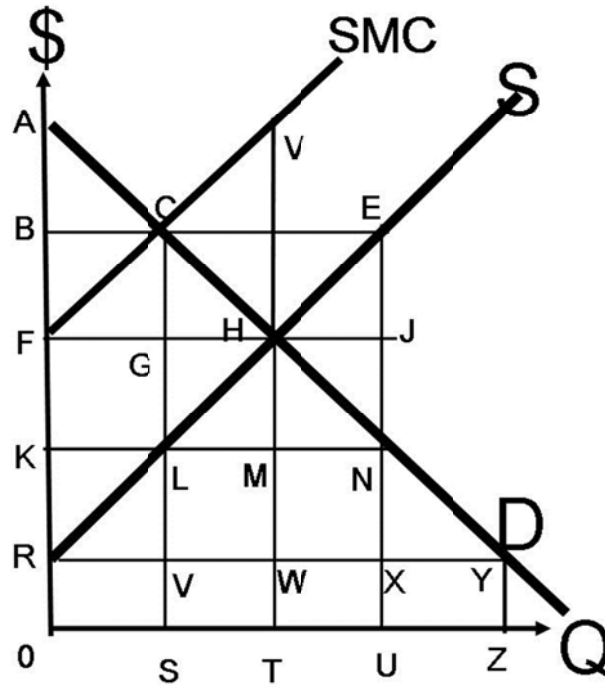
Illustrate Robinson's and Friday's production possibility frontiers (ppf) in the graphs above and then answer the following questions.

20. _____ has an **absolute** advantage in making apples and _____ has a comparative advantage in making apples. (Fill in the blanks)
- Friday, Friday
 - Robinson, Robinson
 - Friday, Robinson
 - Robinson, Friday
21. Suppose trade is **impossible**, so each is in autarky. For each, production equals consumption. At the utility maximizing choice, Robinson produces and consumes
- (40 apples, 0 oranges)
 - (0 apples, 10 oranges)
 - (20 apples, 20 oranges)
 - (20 apples, 5 oranges)
 - (5 apples, 20 oranges)
22. Suppose trade is **possible** and that the price of **one apple** in terms of oranges equals **one orange**. In this case, Robinson **produces** _____ apples and **consumes** _____ apples.
- 5, 20
 - 10, 40
 - 40, 20
 - 20, 20
 - 30, 15



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 Econland is in autarky. Then it opens to free trade with the rest of the world.

23. Relative to autarky, free trade results in a **change** in Econland producer surplus of ____ and a change in Econland total surplus of ____.
- GHL, -CHL
 - FHLK, +RLNY
 - 0, 0
 - FHR, +RHY
 - KLR, +BENK
24. Suppose that instead of free trade, the government of Econland sets a tariff on widgets equal to the length FR. Total tariff revenue collected then equals
- FRXJ
 - FRWH
 - GVXJ
 - LN XV
 - 0
25. Suppose that instead of free trade, the government of Econland sets a quota on widget imports equal to the length LN. The quota rights go to foreign firms and the value of these rights are not included in Econland total surplus. Relative to free trade, the change in Econland surplus from the quota policy equals
- LN XV
 - CHL
 - LVR - NYX
 - AYR
 - RLNY



26. In the above figure, there is a negative externality, so the social marginal cost (SMC in the figure) exceeds private marginal cost (S in the figure). The market equilibrium quantity equals _____ and the socially efficient quantity equals _____ (fill in the blanks)

- a) None are correct.
- b) T, U
- c) T, S
- d) T, T
- e) S, S

27. At the free market equilibrium quantity, the total cost to society of the externality equals

- a) FVHR
- b) CHG
- c) HEN
- d) AENK
- e) FCLR

28. Suppose the optimal Pigouvian tax is imposed, raising the equilibrium price to social marginal cost. The government revenue from the tax equals

- a) BENK
- b) CENL
- c) CEUS
- d) CHG
- e) BCLK

29. If the optimal Pigouvian tax is imposed, total surplus in Econland changes by the area
- a) +FVHR
 - b) -ENH
 - c) +CVH
 - d) +CVHL
 - e) -CHL
30. Increasing returns to scale are likely to be an important part of the cost structure for all of the following industries **except**
- a) Pharmaceuticals
 - b) Aerospace
 - c) Discount retailing (Wal-Mart)
 - d) Software
 - e) Housepainting
31. Suppose at a particular quantity level, marginal cost is less than average total cost. Then average total cost must be _____ as quantity is increased
- a) falling
 - b) constant
 - c) increasing
 - d) none of the above.
32. 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) rivalrous in consumption and nonexcludable
 - b) rivalrous in consumption and excludable
 - c) nonrivalrous in consumption and excludable
 - d) nonrivalrous in consumption and nonexcludable
33. George and Martha both consume meat and potatoes for dinner every day. George only cares about meals where one meal is one slab of meat and two potatoes. Martha cares about the total calories, where one slab of meat gives her 300 calories and one potato gives her 200 calories. George's preferences are _____ and Martha's preferences are _____
- a) Fixed proportions (perfect complements), perfect substitutes
 - b) Fixed proportions (perfect complements), decreasing marginal rate of substitution
 - c) Decreasing marginal rate of substitution, perfect substitutes
 - d) Perfect substitutes, fixed proportions (perfect complements)
 - e) Decreasing marginal rate of substitution, decreasing marginal rate of substitution