Midterm 2
60 minutes
Econ 1101: Principles of Microeconomics
November 14, 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 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. Buckeye consumes pizza and soda and the graph illustrates his indifference curves.
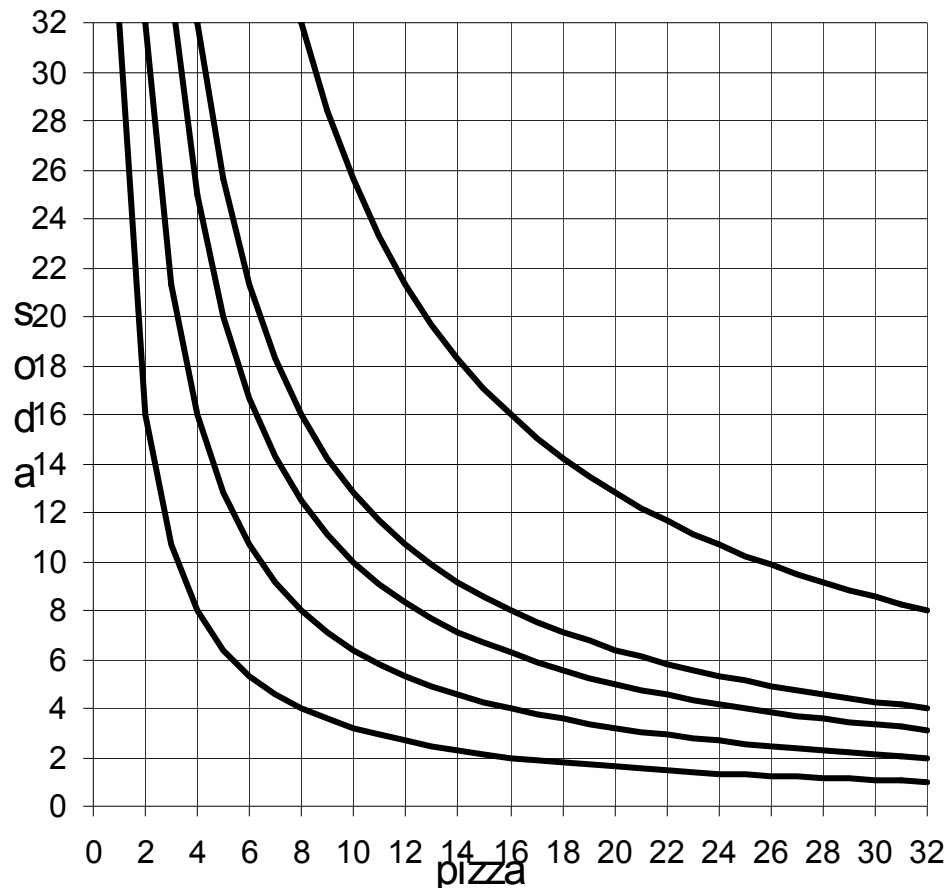
2.   From Buckeye's indifference curves, we can determine that Buckeye is indifferent between having (8 pizzas, 16 sodas) and

   a) (8 pizzas, 6 sodas)

   b)   (14 pizzas, 14 sodas)

   c) (16 pizzas, 10 sodas)

   d) (32 pizzas, 4 sodas)

   e) (8 pizzas, 8 sodas)

3.   Suppose Buckeye has an income of $16, that P^{Pizza}=$2, and that P^{Soda}=$0.50 (fifty cents). Draw Buckeye's budget constraint in the above figure. From this we can see that the opportunity cost of one more slice of pizza equals

   a) ½ 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 Buckeye is
   a) (4 pizza, 8 sodas)
   b) (4 pizza, 16 sodas)
   c) (2 pizza, 24 sodas)
   d) (3 pizza, 10 sodas)
   e) (8 pizza, 8 sodas)

5. Suppose the price of pizza falls to P^{Pizza}=$1. Draw the new budget constraint. The fall in the price of pizza causes the quantity demanded of pizza to increase by how many units?
   a) 2
   b) 4
   c) 6
   d) 8
   e) 12

6. In this example, on account of the decrease in the price of pizza the income effect on the demand for pizza is:
   a) 0 pizzas
   b) 1 pizza
   c) 2 pizzas
   d) 4 pizzas
   e) 6 pizzas

7. Now start from the case where Buckeye has an income of $16, P^{Pizza}=$1, and P^{Soda}=$0.50. Next suppose that income falls by half to $8. Draw the new budget constraint and determine the new optimal consumption bundle. From this we can see that
   a) For Buckeye, the share of income spent on pizza does not change when income changes.
   b) Soda and pizza are both inferior goods
   c) The income elastiticies for both soda and pizza are **negative.**
   d) (a), (b), and (c) are all true
   e) None of the above are true.

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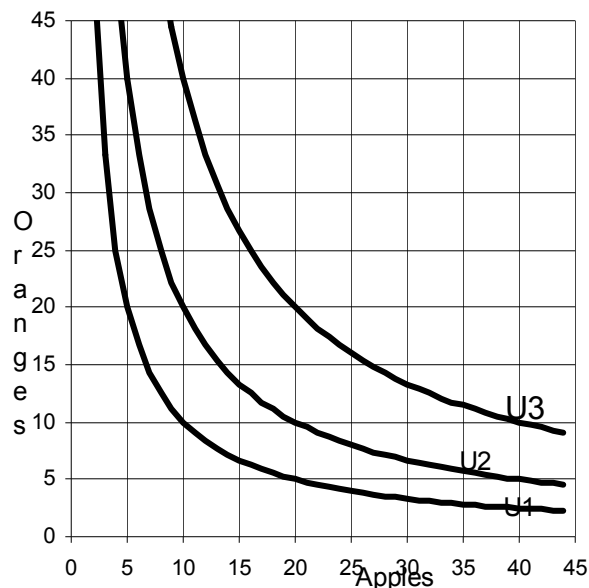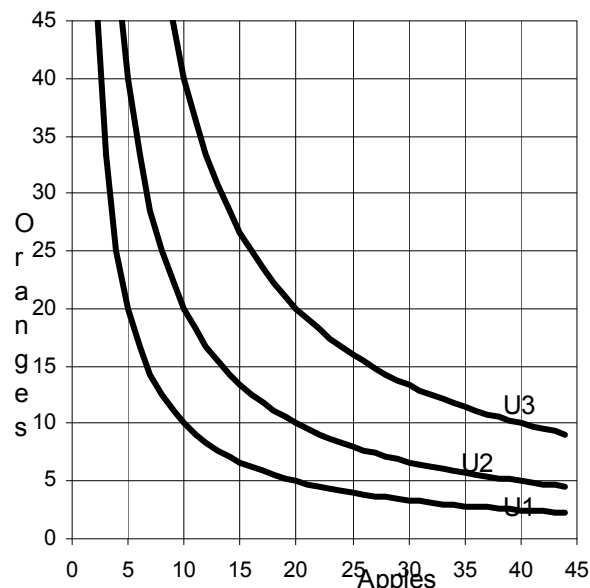
Robinson   ## Friday

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

8.   _____ has an **absolute** advantage in making apples and _____ has a comparative advantage in making apples. (Fill in the blanks)

   a) Friday, Friday
   b) Robinson, Robinson
   c) Friday, Robinson
   d) Robinson, Friday

9.   Suppose trade is **impossible**, so each is in autarky. For each, production equals consumption. At the utility maximizing choice, Robinson produces and consumes

   a) (10 apples, 0 oranges)
   b) (0 apples, 40 oranges)
   c) (40 apples, 0 oranges)
   d) (20 apples, 10 oranges)
   e) (5 apples, 20 oranges)

10.   Suppose trade is **possible** and that the price of **one apple** in terms of oranges equals **one orange**. In this case, Robinson consumes _____ apples and _____ oranges. (Fill in the blanks.)

   a) 5, 20
   b) 10, 20
   c) 20, 20
   d) 20, 10

4

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

    (i) Marginal Cost must always be less than Average Total Cost for all quantities.

    (ii) The long-run demand curve must be unit elastic.

    (iii) The same technology is available to all firms.

    (iv) There are no barriers to entry in the industry.

    (v) Input prices do not change as the industry expands

  a) (i), (ii) and (iii)

  b) (ii), (iii), and (iv)

  c) (iii), (iv), and (v)

  d) (i), (ii), and (v)

  e) (iii) and (iv)

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.
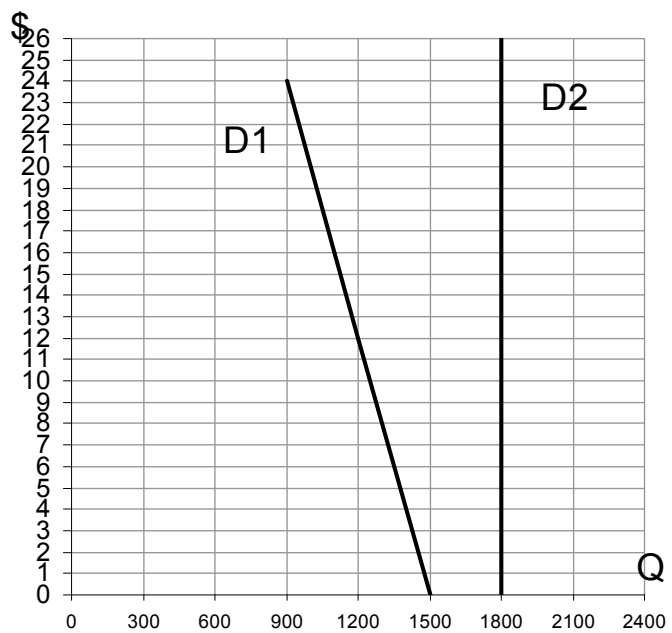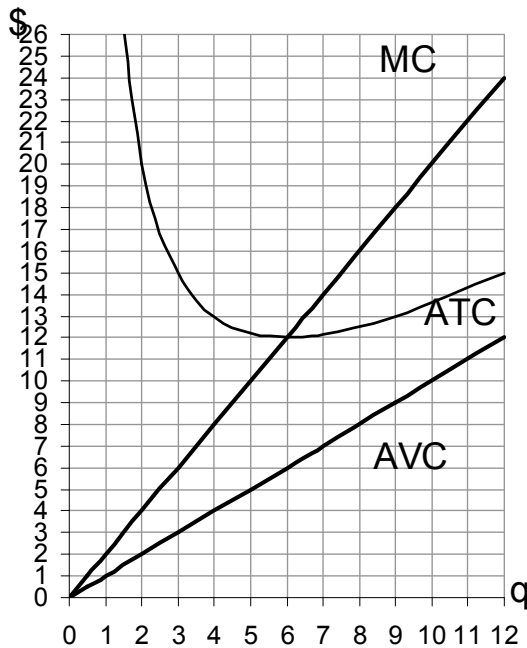
12. Fixed cost equals

  a) Not enough information to tell.

  b) 12

  c) 6

  d) 48

  e) 36

13.   If the price equals 4, in the short run the firm will produce. The resulting maximum profit equals
   a) Not enough information to tell.
   b) –10
   c) –24
   d) –18
   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) 20
   b) 4
   c) 6
   d) 3
   e) 12

15.   Long-run output per firm q^{LR} equals
   a) 3
   b) 4
   c) 6
   d) 9
   e) 12

16.   Long-run industry quantity Q^{LR} equals
   a) 1500
   b) 1200
   c) 900
   d) 600
   e) 300

17.   Long-run number of firms N^{LR} equals
   a) 100
   b) 150
   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) 10
   b) 24
   c) 9
   d) 4
   e) 18

6

19. For this question, refer to the figure below. Suppose in the short run a competitive firm faces a price equal to $8. The firm's profit in the short run equals the area

a) ACHE
b) BCF
c) ABFE
d) ACGD
e) DGHE
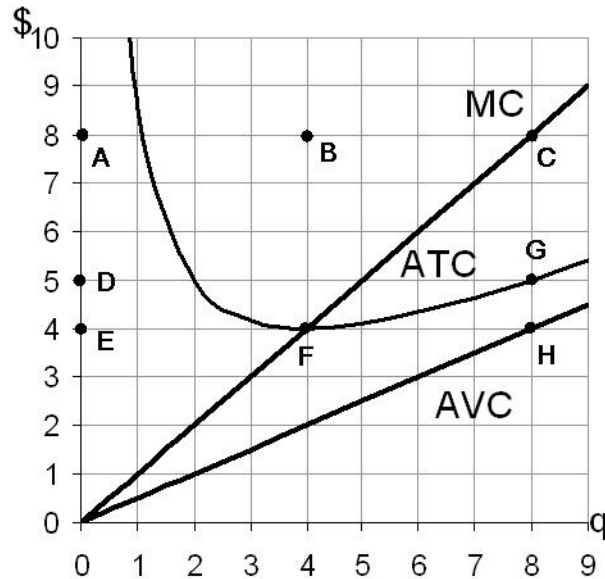
20. A public good is
a) nonrivalrous in consumption and nonexcludable.
b) rivalrous in consumption and excludable.
c) rivalrous in consumption and nonexcludable.
d) nonrivalrous in consumption and excludable.

21. An example of a public good is
a) A pair of tickets to a Vikings game.
b) Cable television
c) A tornado siren
d) A common resource pool like fish

22. When a country allows trade and becomes an **exporter** of a good
a) both domestic producers and domestic consumers become better off.
b) both domestic producers and domestic consumers become worse off.
c) domestic producers become worse off, and domestic consumers become better off.
d) domestic producers become better off, and domestic consumers become worse off.
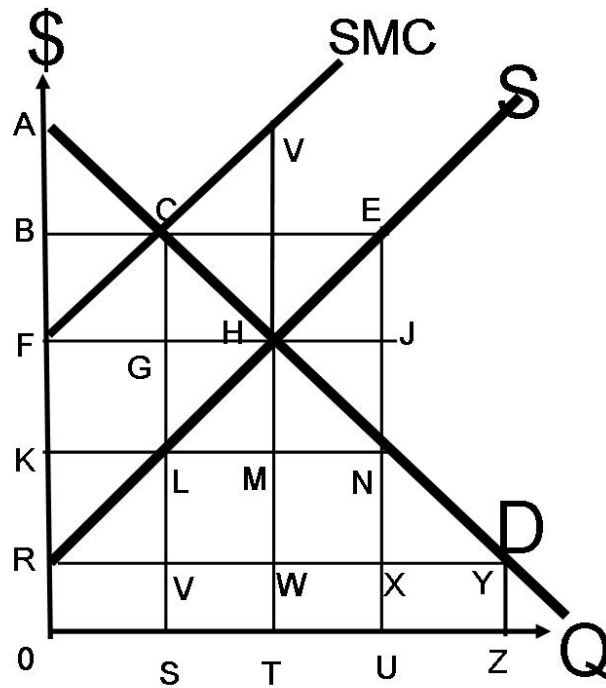
23.   In the above figure, there is a negative externality, so the social marginal cost (SMC in the figure) exceeds private marginal cost (S in the figure). The market equilibrium quantity equals _____ and the socially efficient quantity equals _____ (fill in the blanks)

a) None are correct.

b) T, U

c) T, S

d) T, T

e) S, S

24.   The optimal Pigouvian tax (that raises equilibrium price to social marginal cost) equals

a) HT

b) CS

c) VT

d) CG

e) CL

25.   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

26. Which of the following statements regarding "cap and trade" policies are true?

(i) It works like a "command and control" style policy because it imposes a cap at each individual plant, rather than a cap of total emissions across plants.

(ii) It has a similar economic impact similar to a tax on emissions, with the difference being that with a tax, the revenue goes to the government, but with "cap and trade," the equivalent of tax revenue goes to whomever is allocated emission allowances.

(iii) It has been adopted in the European Union as part of carbon emissions policy.

(iv) It has been adopted in the United States as part of carbon emissions policy.

a) (i), (ii), (iii), (iv)
b) (i), (ii), (iii)
c) (ii), (iii)
d) (ii), (iii), (iv)
e) (i)

27. Which of the following statements about the global division of labor in the production of the iPhone is an example of specialization according to comparative advantage?

(i) That assembly of iPhones takes place in Shenzhen, China where wages for unskilled labor is relatively low

(ii) That design takes place in California where there is a large supply of innovative talent.

a) (i) only
b) (ii) only
c) (i) and (ii)
d) Neither
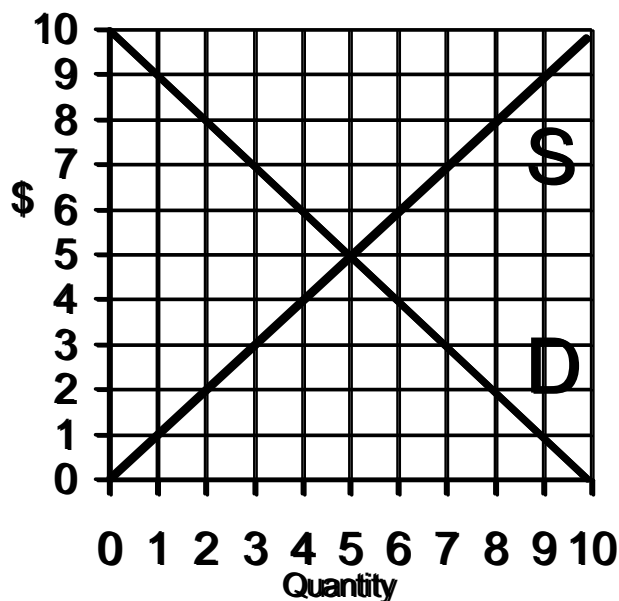
Suppose demand and supply for widgets in Econland is given by the above diagram. You can see that in autarky, the equilibrium price for a widget is $5. Suppose Econland opens up to trade with the rest of the world, where the **world price** of widgets is **$2 per widget**. Suppose that Econland is small relative to the rest of the world so that when it opens up to trade, it doesn't change the world price.

28. What is the change in Econland total surplus from opening up to trade with the rest of the world?
   a) 0
   b) 2
   c) 3
   d) 6
   e) 9

29. What is the change in Econland's Producer Surplus from opening up to trade with the rest of the world?
   a) −3
   b) −5
   c) −8
   d) −10.5
   e) −12.5

30. Suppose that at the same time that Econland begins trading with the rest of the world, a tariff of $1 per widget is imposed on import in Econland. The total tariff revenue collected will be
   a) 0
   b) 2
   c) 3
   d) 4
   e) 6

31. Which of the following statements is true about the **short run** and the **long run** in a perfectly competitive industry?

i)   In the short run, firms maximize profit by setting price equal to average variable cost

ii)   In the long run, firms may choose to exit the industry

iii)   In the long run, different firms may produce different amounts

iv)   In the short run, firms may earn positive profits

a) i, iii

b) ii

c) iii, iv

d) ii, iv

e) i, ii, iv

32. Econland has a thriving domestic industry in **high-tech computer chips** and currently does not allow trade. The United States is negotiating with Econland to allow free trade in the computer chip market. Why might Econland **not** want to allow free trade in this market?

a) Overall surplus in Econland is higher under free trade

b) Consumers will benefit from lower prices

c) Computer chips are an industry that promotes innovation in other domestic markets

d) Econland has a comparative advantage in computer chips

33. Keaton and Ethan both consume bacon and eggs for breakfast every morning. Keaton only cares about "servings," where one serving is one egg and two slices of bacon. Ethan 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. Keaton's preferences are _____ and Ethan's preferences are _____

a) Decreasing marginal rate of substitution, perfect substitutes

b) Fixed proportions (perfect complements), perfect substitutes

c) Perfect substitutes, fixed proportions (perfect complements)

d) Fixed proportions (perfect complements), decreasing marginal rate of substitution

e) Decreasing marginal rate of substitution, decreasing marginal rate of substitution

34. Which of the following industries **does not** show increasing returns to scale

a) Pharmaceuticals

b) Discount retailing (Wal-Mart)

c) Software

d) Apple orchards

35. If there is a positve externality in Econland, which of the following statements are true:

    i)   Total surplus can be improved if a subsidy equal to the amount of the external benefit is enacted

    ii)   Imposing a Pigiouvian tax equal to the amount of the external benefit will increase total surplus

    iii)   Social marginal cost is equal to private marginal cost

    iv)   The free market equilibrium quantity is below the socially optimal quantity

    a) i, iii

    b) ii

    c) i, iii, iv

    d) ii, iv

    e) i, ii, iv