

Iowa State University  
**Economics 101**  
**Microeconomics Principles**  
Prof. Kilkenny Spring 2005

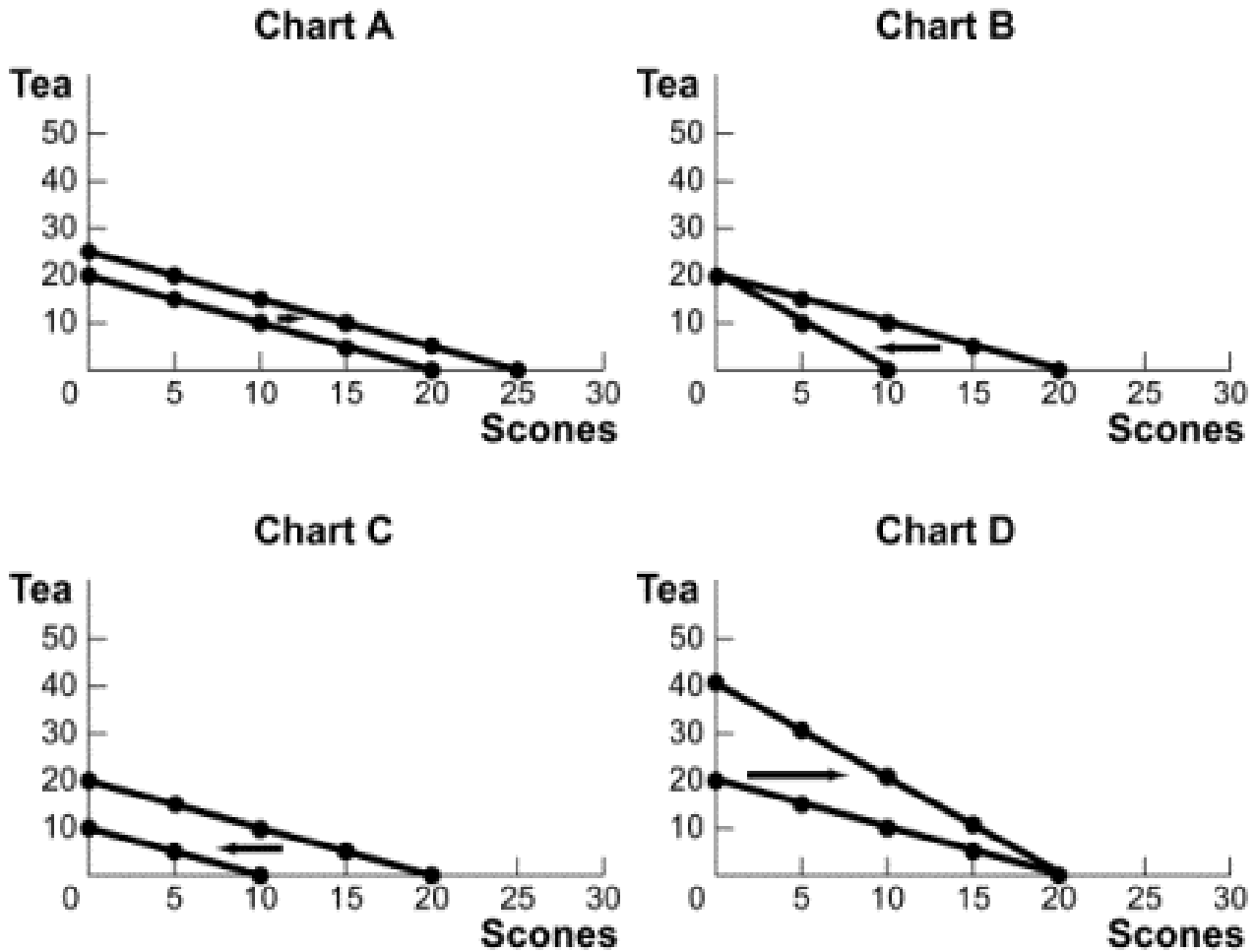
Second Exam  
April 8, 2005

# 1

General Instructions:

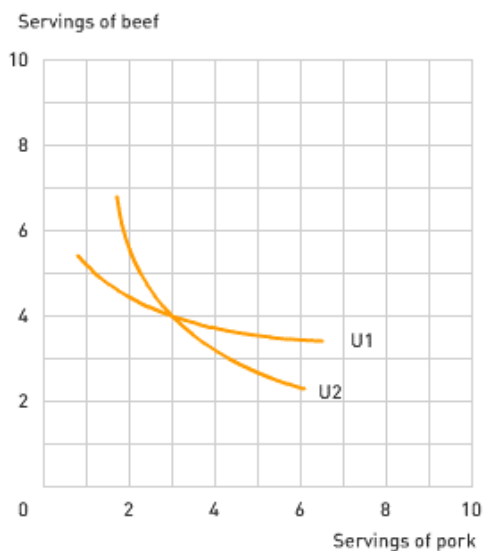
1. Write **your name** here: \_\_\_\_\_
2. **USE a #2 PENCIL:** Write your **name**, Student **ID#**, Section **#** and the **exam version #** (above) on the NCS bubble/answer sheet; and blacken the corresponding circles.
3. WAIT until you are instructed to do so before you open your exam.
4. There are 35 problems on 9 pages in this exam.
5. Blacken ONE answer for each question on your NCS answer sheet.
6. Read the question carefully before answering.  
HINT: draw graphs and write out formulas to improve your focus on the correct answer.
7. **DO NOT LOOK at anyone else, much less their test.** Even if it just seems like you are looking at someone else's answers (not doing your own work), you can be graded an "F" on this exam.
8. You have 50 minutes.
9. When you are finished, turn in BOTH this exam and your NCS answer sheet.

Use the following to answer questions 1-3:



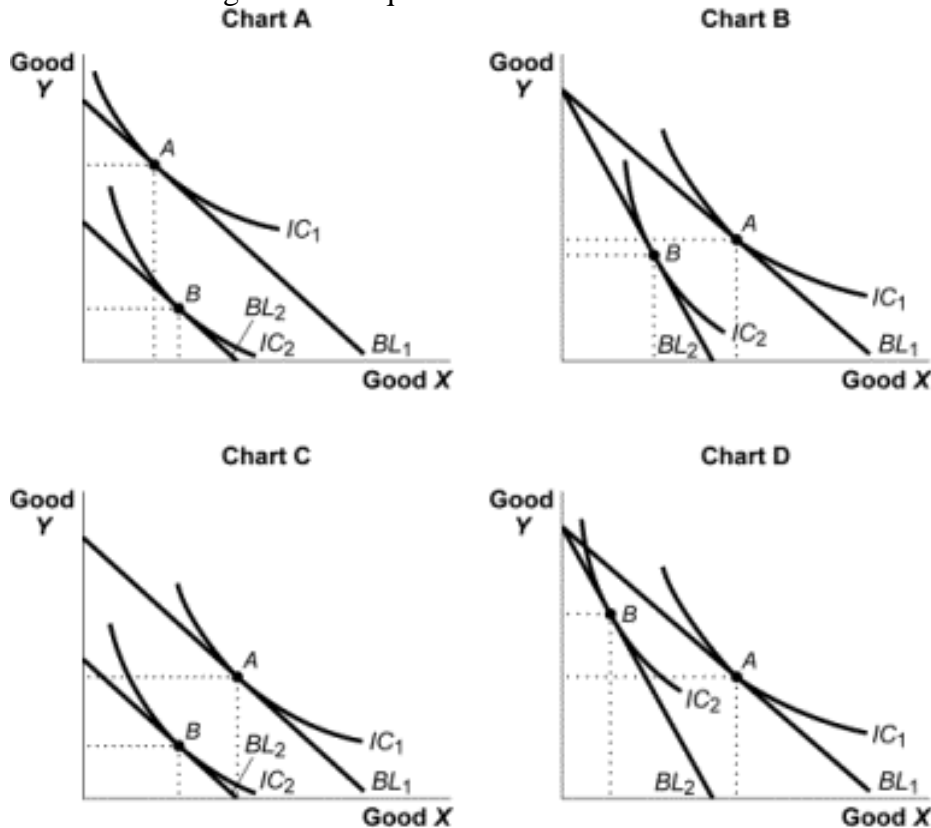
- For months now, Agnes has had \$20 per month to spend on tea and scones. The price of a cup of tea and the price of a scone have been each \$1. Which of the charts shows what will happen to her budget line if the price of a cup of tea falls to \$0.50?
  - Chart A
  - Chart B
  - Chart C
  - Chart D
- Which shows what will happen to her budget line if the price of a scone rises to \$2?
  - Chart A
  - Chart B
  - Chart C
  - Chart D
- Which shows what will happen to her budget line if the prices of a cup of tea and a scone both increase to \$2?
  - Chart A
  - Chart B
  - Chart C
  - Chart D

Two of Tim's indifference curves for the number of servings of beef and pork in his meals:



4. Which of the properties below are *violated* by Tim's indifference curves?
- I. Each indifference curve corresponds to a unique utility level.
  - II. More is better.
  - III. An indifference curve has a convex shape.
  - IV. An indifference curve is downward sloping.
- A) I and II  
B) I and III  
C) I and IV  
D) II and III
5. As we move down an individual's indifference curve, their total utility falls
- A) True  
B) False
6. An indifference curve is a line that shows all the consumption bundles:
- A) that an individual can purchase with a given income.
  - B) that yield the same total utility for an individual.
  - C) that yield the same marginal utility.
  - D) that have the same marginal rate of substitution.

Use the following to answer questions 7-9:

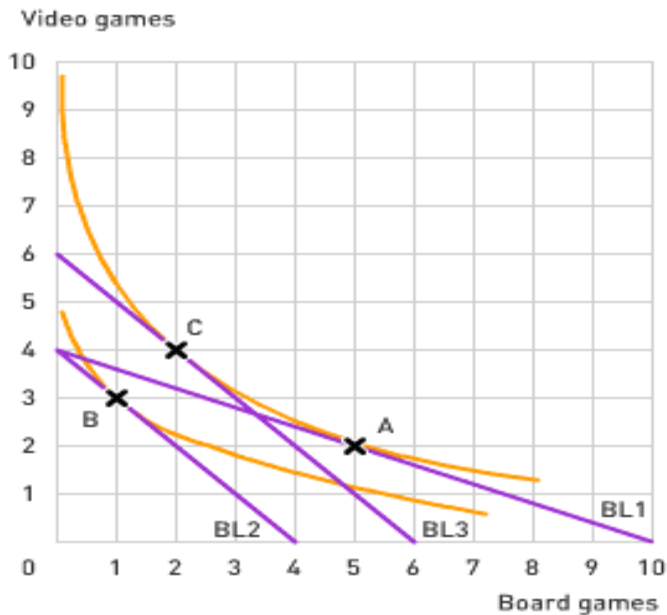


7. Which chart shows the effect of an increase in the **price of X**, when **good Y** is an *inferior* good?
  - A) A
  - B) B
  - C) C
  - D) D
  
8. Chart B shows:
  - A) an increase in the price of X when both X and Y are normal goods.
  - B) a decrease in the price of X when both X and Y are normal goods.
  - C) an increase in the price of X when X and Y are inferior goods.
  - D) a decrease in income on the demand for good X.
  
9. Which chart shows the effect of a *decrease in income* when both good X and good Y are normal goods?
  - A) A
  - B) B
  - C) C
  - D) D
  
10. LaToya sees honey and sugar as perfect substitutes. She is always willing to substitute 1 teaspoon of honey for 2 teaspoons of sugar. If the price of honey is three times as expensive as sugar, LaToya:
  - A) will use only honey.
  - B) will use only sugar.
  - C) will use some honey and some sugar.
  - D) will use a lot of sugar and a little honey.

11. According to the *relative price rule*, the **optimal consumption bundle** of vacation days and donuts is characterized by:
- A)  $U(\text{vacation day}) = U(\text{donut})$
  - B)  $MU(\text{vacation day}) = MU(\text{donut})$
  - C)  $MU(\text{vacation day})/MU(\text{donut}) = P(\text{vacation day})/P(\text{donut})$
  - D)  $U(\text{vacation day})/U(\text{donut}) = P(\text{vacation day})/ P(\text{donut})$

Use the following to answer questions 12-14:

For entertainment, Kyle buys video games and board games. The graph shows three budget lines (BL1, BL2, and BL3), two indifference curves, and three consumption bundles (A, B, and C). Kyle has \$160 to spend, video games cost \$40 each, and initially, board games cost \$16 each. His initial consumption bundle is Point A.



(Yes, this was a Required Homework problem.)

12. If the price of **Board games** rises to \$40, the *substitution effect* on Kyle's demand for *video games* is \_\_\_\_ of \_\_\_\_ in the amount of *video games* Kyle would buy.
- A) A decrease; one
  - B) A decrease; two
  - C) An increase; two
  - D) An increase; three
13. Now take into account the effect of the rest of the change in prices on Kyle's budget, shown by budget line BL2. What is the *income effect* of the increase in the price of board games on the quantity of VIDEO games demanded by Kyle.
- A) Decrease; one
  - B) Decrease; four
  - C) Increase; two
  - D) Increase; four

14. What is the total effect of the *board games* price increase to \$40 on Kyle's demand for **video** games?
- A) increase of one
  - B) decrease of one
  - C) decrease of two
  - D) decrease of four
15. An individual gets 5 units of total utility from 1 slice of pizza and 9 units total utility from 2 slices of pizza. The principle of *diminishing marginal utility* allows us to conclude that their total utility from 3 slices of pizza will be:
- A) exactly 12 units of utility.
  - B) less than 13 units of utility.
  - C) less than 9 units of utility.
  - D) exactly 13 units of utility.
16. At Frankie's **Buy-the-Slice Pizza**, Brian eats twelve slices of pizza, thinking that at only \$2 per slice, the optimal decision is to eat to maximize total utility from pizza, or until the marginal utility of the last slice is zero. Brian is being economically rational.
- A) True
  - B) False

Use the following to answer questions 17-21:

<i>Q</i>	<i>VC</i>	<i>AVC</i>	<i>TC</i>	<i>ATC or AC</i>	<i>MC</i>
1	10		30		
2	18		38		
3	31		51		
4	50		70		

*Q* = output, *VC* = variable cost, *TC* = total cost

17. Increasing quantity from 1 to 2 incurs a marginal cost of:
7. Increasing quantity from 1 to 2 incurs a marginal cost of:
- A) 18.
  - B) 10.
  - C) 8.
  - D) 38.
18. What is the *minimum efficient scale* for this firm?
8. What is the *minimum efficient scale* for this firm?
- A) 1.
  - B) 2.
  - C) 3.
  - D) 4.
19. What is the *shut-down* price for this firm?
9. What is the *shut-down* price for this firm?
- A) \$8
  - B) \$9
  - C) \$10
  - D) \$17
20. The *break-even* price for this firm is:

20. The *break-even* price for this firm is:

- A) \$10
- B) \$9
- C) \$17
- D) \$8

21. The fixed cost for this firm is \$20.

- A) True
- B) False

22. Total Costs for a Concrete Business:

	Q=	20	40	100
set up A		\$12,000	\$16,000	\$140,000
set up B		\$24,000	\$30,000	\$100,000
set up C		\$50,000	\$53,000	\$80,000
set up D		\$8,000	\$20,000	\$180,000

Which fixed cost set up for this concrete mixing business is optimal if the market demand is expected to be at most  $Q = 40$  at a market price of \$400?

- A) A
- B) B
- C) C
- D) D

23. For a perfectly competitive firm, *marginal revenue*:

- A) is less than price.
- B) is greater than price.
- C) decreases as the firm increases output.
- D) is equal to price.

24. Average variable cost equals all the following *except*:

- A) variable cost divided by output.
- B) (total cost – fixed cost) divided by output.
- C) average total cost minus average fixed cost.
- D) variable cost times output.

25. Which set of conditions characterize a *perfectly competitive* market?

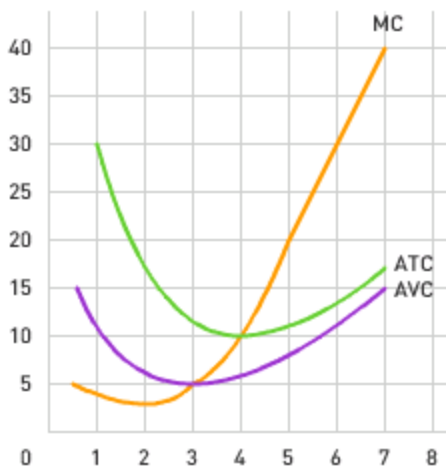
- A) Many producers of differentiated products.
- B) Many freely entering or exiting producers of commodities.
- C) Producers of commodities who are free to charge a different price because they have different costs.
- D) Many producers of differentiated items sold at prices that may not even cover their total costs.

26. The long run refers to the period of time for which:

- A) a fixed input exists.
- B) all inputs are variable.
- C) marginal costs are decreasing.
- D) none of the above

27. The demand curve from the point of view of a *perfectly competitive* firm is:
- perfectly inelastic.
  - perfectly elastic.
  - downward sloping.
  - relatively but not perfectly elastic.
28. For large beer breweries, it is common for average total cost to decline as output increases. This indicates that many breweries achieve:
- diseconomies of scale.
  - diminishing marginal returns.
  - economies of scale.
  - constant returns to scale.

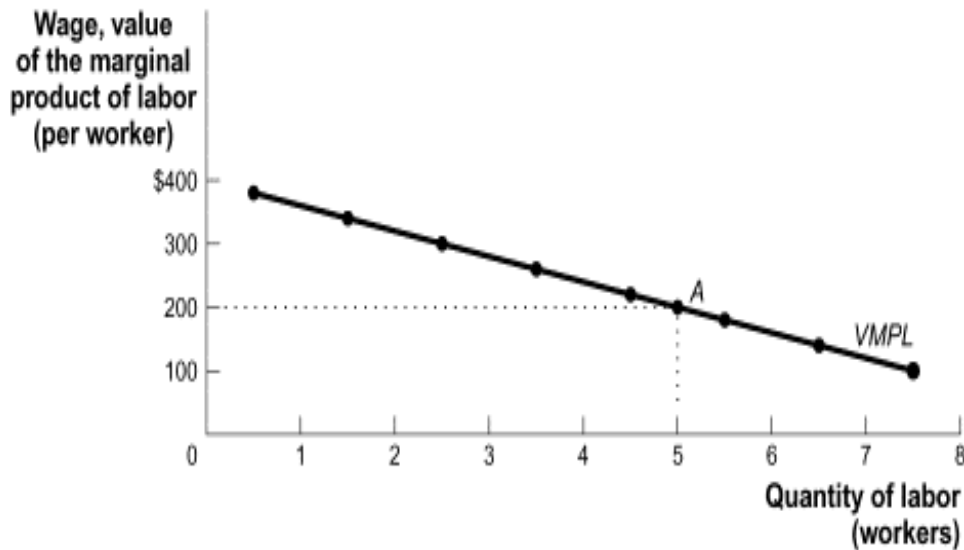
Use the following to answer questions 29-32:



29. If market price is \$20, the profit-maximizing quantity of output is:
- 2.
  - 3.
  - 4.
  - 5.
30. If the market price is \$4, the profit-maximizing quantity of output is:
- 0.
  - 1.
  - 2.
  - 3.
31. If the market price is \$8, a firm with good management will:
- minimize its losses by shutting down.
  - minimize its losses by continuing to produce.
  - maximize profit by producing above *minimum efficient scale*.
  - earn an economic profit.

32. This firm's short-run supply curve is the \_\_\_\_\_ curve above a price of \$\_\_\_\_\_.
- A) average total cost curve; 10
  - B) average variable cost curve; 5
  - C) marginal cost curve; 5
  - D) marginal cost curve; 10
33. To maximize profits a firm will employ workers up to the point at which, for the last worker employed:
- A) marginal product is equal to the nominal wage rate.
  - B) the value of the marginal product is equal to the wage rate.
  - C) the value of the marginal product is equal to the price per unit of output.
  - D) the value of the marginal product is as high as possible.

Use the following to answer questions 34-35:



34. According to the graph, if the market wage rate increases above \$200/day:
- A) the VMPL would increase (shift right).
  - B) the profit-maximizing quantity of labor employed would increase.
  - C) the VMPL would decrease (shift left).
  - D) the profit-maximizing quantity of labor employed would decrease.
35. If the price of the output increases (and everything else stays the same), then the profit-maximizing quantity of labor will:
- A) increase.
  - B) decrease.
  - C) stay the same.
  - D) be indeterminate.

## Answer Key version 1

1. D
2. B
3. C
4. A
5. B
6. B
7. D
8. A
9. C
10. B
11. C
12. C
13. A
14. A
15. B
16. B
17. C
18. C
19. B
20. C
21. A
22. A
23. D
24. D
25. B
26. B
27. B
28. C
29. D
30. A
31. B
32. C
33. B
34. D
35. A