

Faculty of Arts and Sciences – Department of Economics ECONOMICS 211 – FALL 2013 – LEILA DAGHER – Sections 9 & 6

Chapter 1 – Exercises

- I- Use the following information to answer the next two questions. Nicola and Alexander each have some dollars and some apples. Nicola values a pound of apples at \$3 whereas Alexander values a pound of apples at \$1.
 - 1. In which of the following cases has an allocatively efficient trade taken place?
 - a) The market price of apples is \$3 per pound. Nicola sells apples to Alexander.
 - b) The market price of apples is \$1 per pound. Nicola sells apples to Alexander.
 - c) The market price of apples is \$2 per pound. Nicola sells apples to Alexander.
 - d) The market price of apples is \$2 per pound. Alexander sells apples to Nicola.

ANSWER: (d) When the market price of apples is \$2 per pound and Alexander is the seller, he gains \$1. Nicola also gains because she receives goods she values at \$3, for a payment of only \$2.

- 2. In which of the following cases has an allocatively efficient trade not taken place?
 - a) The market price of apples is \$3 per pound. Alexander sells apples to Nicola.
 - b) The market price of apples is \$1.50 per pound. Alexander sells apples to Nicola.
 - c) The market price of apples is \$1.50 per pound. Nicola sells apples to Alexander.
 - d) The market price of apples is \$2 per pound. Alexander sells apples to Nicola.

ANSWER: (c) An efficient trade can occur only when some participant is better off and no participant is worse off (or if the gainer can adequately compensate the loser). In Option (a), Alexander gains \$2 and Nicola does not lose. In Option (b), Nicola and Alexander both gain. In Option (d), Alexander and Nicola both gain. In Option (c), Alexander gains 50¢ but Nicola loses \$1.50.

II- Use the following diagram to answer the next four questions:



- 1. In the diagram, the slope of the line is:
 - a) Positive and variable.
 - b) Positive and constant.
 - c) Negative and variable.
 - d) Negative and constant.



ANSWER: (d) The diagram shows a straight line, and straight lines have a constant slope. Visually, or by using the "rise over run" formula, the relationship is negative because as one variable increases in value the other decreases in value.

- 2. The slope of line between Point *A* and Point *B* is:
 - a) 3.
 - b) 1/3.
 - c) −3.
 - d) -1/3.

ANSWER: (c) Use the "rise over run" formula. The rise is -3 (from 11 to 8) and the run is +1 (from 1 to 2).

- 3. At Point *D*, the value of *Y* is
 - a) –3.
 - b) 3.
 - c) 5.
 - d) 2.

ANSWER: (d) As X "steps up" in value by 1, Y "steps down" in value by 3. At Point B, X has a value of 2 and Y has a value of 8. Moving to Point D, X increases by 2 and Y decreases by 6, from 8 to 2.

- 4. In the diagram, when the line reaches the vertical (Y) axis the value of Y will be
 - a) 3.
 - b) 8.
 - c) 11.
 - d) 14.

ANSWER: (d) As X "steps down" in value by 1, Y "steps up" in value by 3. At Point A, X has a value of 1 and Y has a value of 11. X decreases by 1 and Y increases by 3, from 11 to 14.

- III- Select the option that provides the single best answer.
 - 1. Local farmers reduce the price of their tomatoes at the farmers' market. The price of corn is 30¢ per ear. A passing economist theorizes that, *ceteris paribus*, buyers will purchase more tomatoes than before. Which of the following is TRUE? The economist is
 - a) Implying that the price of tomatoes will fall even further.
 - b) Assuming that the price of corn will remain at 30¢ per ear.
 - c) Assuming that tomatoes are of a better quality than before.
 - d) Implying that corn is of a poorer quality than before.

ANSWER: (b) If the price of corn fell, perhaps very sharply, buyers might buy more corn and fewer tomatoes. Therefore, the economist is assuming that the price of corn is not going to change. That's what ceteris paribus implies.

- 2. Which of the following is **not** given in the textbook as a criterion for judging the results of economic policy?
 - a) Economic stability
 - b) Employment
 - c) Efficiency
 - d) Equity

ANSWER: (b) Unemployment is certainly an important economic variable, but it is not one of the criteria for evaluating the results of economic policy.



- 3. Economic growth may occur if
 - a) More machines become available.
 - b) More workers become available.
 - c) Workers become more efficient.
 - d) All of the above are correct.

ANSWER: (d) Growth will occur if resources become more plentiful or more productive.

- 4. Economics is the study of how
 - a) Scarce resources are used to satisfy unlimited wants.
 - b) We choose to use unlimited resources.
 - c) Limitless resources are used to satisfy scarce wants.
 - d) Society has no choices.

ANSWER: (a) Economics is about choice—how we ration scarce resources to meet limitless wants.

- 5. The opportunity cost of Choice *X* can be defined as the
 - a) Cheapest alternative to Choice X.
 - b) Most highly valued alternative to Choice X.
 - c) Price paid to obtain X.
 - d) Most highly priced alternative to Choice X.

ANSWER: (b) Price is not necessarily a reliable guide to value for a particular individual. Opportunity cost is the measure of the value placed on the next most-preferred item forgone as a result of Choice X.

- 6. In economics, efficiency means that
 - a) Income is distributed equally among all citizens.
 - b) There is a low level of inflation and full unemployment of economic resources.
 - c) Total productivity is increasing at a constant and equal rate within each sector of the economy.
 - d) The economy is producing those goods and services that citizens desire and is doing so at the least possible cost.

ANSWER: (d) Efficiency means that producers are using the least costly method of production to supply those goods that are desired by consumers.

- 7. Which of the following statements is true?
 - a) Microeconomics studies consumer behavior, whereas macroeconomics studies producer behavior.
 - b) Microeconomics studies producer behavior, whereas macroeconomics studies consumer behavior.
 - c) Microeconomics studies behavior of individual households and firms, whereas macroeconomics studies national aggregates.
 - d) Microeconomics studies inflation and opportunity costs, whereas macroeconomics studies unemployment and marginal costs.

ANSWER: (c) To review the micro/macro distinction, refer to page 38.

- 8. Which of the following statements is true?
 - a) There is a positive relationship between the price of a product and the quantity demanded.
 - b) There is a positive relationship between the number of umbrellas bought and the amount of rainfall.
 - c) There is a negative relationship between height and weight.
 - d) There is a negative relationship between sales of ice cream and noonday temperatures.



ANSWER: (b) There is a negative relationship between price and quantity demanded, so A is incorrect. The greater the rainfall, the larger the number of umbrellas bought.

- Oliver Sudden discovers that if he cuts the price of his tomatoes at the farmers' market, his sales revenue increases. Expecting similar results, all the other tomato sellers follow his example. They are guilty of committing
 - a) The fallacy of composition.
 - b) The fallacy of post hoc, ergo propter hoc.
 - c) The fallacy of correlation.
 - d) Ceteris paribus.

ANSWER: (a) Just because an action taken by one individual produces a given outcome, the same action taken by many need not.

10. The quantity of six-packs of Quite Lite beer demanded per week (Q_d) in Hometown is described by the following equation:

$Q_{\rm d} = 400 - 100P$

Where P (in dollars) is the price of a six-pack. This equation predicts that

- a) 300 six-packs will be bought this week.
- b) A \$1 rise in price will cause 100 more six-packs to be bought this week.
- c) 300 six-packs will be bought per \$100 this week.
- d) A 50¢ rise in price will cause 50 fewer six-packs to be bought this week.

ANSWER: (d) Put in numbers. If P = \$2, then Q_d will equal 400 – 100(2), or 200. If the price rises by 50¢, then Q_d will equal 400 – 100(2.5), or 150—a fall of 50.

- 11. The *ceteris paribus* assumption is used to
 - a) Make economic theory more realistic.
 - b) Make economic analysis more realistic.
 - c) Avoid the fallacy of composition.
 - d) Focus analysis on the effect of a single factor.

ANSWER: (d) The ceteris paribus assumption freezes the effect of all but one change so that the effects of that change may be examined.

- 12. During the debate about balancing the federal government's budget, it was proposed that Medicaid benefits be reduced. This proposal was criticized because low-income families (who receive Medicaid) would spend a higher percentage of their income on medical services than high-income families would spend. This argument was based on concerns about
 - a) Economic growth.
 - b) Efficiency.
 - c) Economic stability.
 - d) Equity.

ANSWER: (d) For equity, read "fairness." Critics of the proposal argue that it is unfair to make poor families spend a larger part of their lower income on medical services.

- 13. The Channel Tunnel, linking the United Kingdom and France, was originally planned to cost \$100 million. After work had begun and the two excavators were under the English Channel, with \$70 million already spent, the estimate of the total bill was revised to \$150 million. At this point the marginal cost of completion was best estimated as
 - a) \$30 million.
 - b) \$50 million.



- c) \$70 million.
- d) \$80 million.

ANSWER: (d) To complete the project would cost \$80 million more than had already been spent.

IV- Use the following diagram below to answer the next four questions.



- 1. In the preceding diagram, the slope of the line is:
 - a) Positive and variable.
 - b) Positive and constant.
 - c) Negative and variable.
 - d) Negative and constant.

ANSWER: (b) The diagram shows a straight line—straight lines have a constant slope. Visually, or by using the "rise over run" formula, the relationship is positive because, as one variable increases in value, the other also increases in value.

- 2. In the preceding diagram, the slope of the line between Point A and Point B is
 - a) 5/2.
 - b) 2/5.
 - c) -2/5.
 - d) -5/2.

ANSWER: (a) Use the "rise over run" formula. The rise is +5 (Y goes from 7 to 12) and the run is +2 (X goes from 2 to 4).

- 3. In the preceding diagram, at Point *D*, the value of *Y* is
 - a) 5.
 - b) 8.
 - c) 19.5.
 - d) 22.

ANSWER: (d) As X "steps up" in value by 2, Y "steps up" in value by 5. At Point C, X has a value of 6 and Y has a value of 17. Moving to Point D, X rises by 2 and Y rises by 5, from 17 to 22.

- 4. In the preceding diagram, when the line reaches the vertical (Y) axis the value of Y will be
 - a) 2.
 - b) 5/2.
 - c) 7.



d) 12.

ANSWER: (a) As X "steps down" in value by 2, Y "steps down" in value by 5. At Point A, X has a value of 2 and Y has a value of 7. X decreases by 2 and Y decreases by 5, from 7 to 2.

V- Use the following diagrams to answer the next four questions.



- 1. Of the four curves, which curve has a slope that is negative and decreasing?
 - a) A
 - b) *B*
 - c) C
 - d) D

ANSWER: (c) The relationship shows that as X increases in value, Y decreases in value—a negative relationship. The slope is decreasing because, as X increases in value, the decrease in the value of Y becomes smaller and smaller.

- 2. Of the four curves, which curve has a slope that is positive and increasing?
 - a) A
 - b) *B*
 - c) C
 - d) D

ANSWER: (a) The relationship shows that as X increases in value, Y also increases in value—a positive relationship. The slope is increasing because, as X increases in value, the increase in the value of Y becomes larger and larger.

- 3. Of the four curves, which curve has a slope that is positive and decreasing?
 - a) A
 - b) *B*
 - c) C
 - d) *D*

ANSWER: (b) The relationship shows that as X increases in value, Y also increases in value—a positive relationship. The slope is decreasing because, as X increases in value, the increase in the value of Y becomes smaller and smaller.



- 4. Of the four curves, which curve appears to be described by the equation $y = x^2$?
 - a) A
 - b) B
 - c) C
 - d) D

ANSWER: (a) As X assumes higher values, the values of Y will increase more rapidly.

VI- APPLIED EXERCISES

1. Just before your senior year, you have a summer internship in a bank.. You are "noticed" and are offered a full-time position, with a salary of \$35,000 a year. A rival bank, keen to attract you, offers you \$37,000 for a similar position. After much thought, you decide to return to college to complete your economics degree. Based on the information given, what was the opportunity cost of your decision?

If you had chosen one of the banking jobs instead of resuming your studies, how could you have explained your decision to your parents, who would have pointed out that you would have "wasted" three years of college?

ANSWER: The opportunity cost is the salary forgone—\$37,000 if you had chosen the first bank. Presumably, the offer of the job at the bank was based on your abilities—some of which would have been developed while at college. That time, then, was not wasted. You could have taken the bank job and explained that the three years of college got you the internship and sufficient skills to be noticed in the first place. Also, the three college years cannot be relived—decisions should be based on the future, not the past.

- 2. Which of the following statements are positive and which are normative?
 - a) The moon is made of green cheese.
 - b) States to the west of the Mississippi have lower state income tax rates than states to the east have.
 - c) The federal government should be required to balance its budget.
 - d) The most serious economic problem confronting the nation is unemployment.
 - e) We should abolish the minimum wage.
 - f) We should index-link the minimum wage to the rate of price inflation.
 - g) If the federal budget deficit is reduced, then interest rates will decrease.

ANSWER: Positive statements are testable; normative statements are opinions.

- a) Positive. A statement need not be correct to be positive.
- b) Positive. Data can be gathered and analysis undertaken.
- c) Normative, as signaled by the use of should.
- d) Normative. This is an opinion, even during the Great Depression.
- e) Normative. This is an opinion, as signaled by the use of should.
- f) Normative. This is an opinion, as signaled by the use of should.
- g) Positive. This statement can be tested.
- 3. Some time ago, you bought a ticket for a concert by a local group, Saxon Violins, for \$40. However, more recently, a friend invited you to a party that you'd much prefer to attend. All your efforts to sell your concert ticket have been unsuccessful. Should you go to the concert, which you've paid for, or to the party?

ANSWER: Go to the party! The \$40 you paid should be irrelevant to your decision. In either case, the \$40 has been spent.



4. As children get older, they grow taller. There exists a direct relationship between a child's age and its height.

Age	6	7	8	9	10	
Height	120cm	125 cm	130 cm	135 cm	140 cm	

One would also expect a direct relationship between a child's age and its weight.

Age	6	7	8	9	10	
Weight	30 kg	34 kg	36 kg	38 kg	40 kg	

Combining the two series of data yields the following table:

Age	6	7	8	9	10	
Height	120 cm	125 cm	130 cm	135 cm	140 cm	
Weight	30 kg	34 kg	36 kg	38 kg	40 kg	

Graph the Height (X) Weight (Y) combination for each age. Is the relationship between height and weight direct or inverse?

ANSWER:



The relationship between height and weight is direct (positive).



5. Following are a time-series graph of the movement of the poverty rates for U.S. families between 1986 and 1998, and a scatter diagram indicating the association between the poverty (P) and unemployment (U). Study both graphs and answer the following questions:



Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
U%	7.0	6.2	5.5	5.3	5.5	6.7	7.4	6.8	6.1	5.6	5.4	4.9	4.5
Р%	13.6	13.4	13.1	12.8	13.5	14.2	14.5	15.1	14.5	13.8	13.7	13.3	12.7

- a) What is the poverty rate in:
 - > 1987
 - > 1990
 - > 1995
- b) What are the poverty rate/unemployment rate combinations in:
 - > 1988
 - > 1992
 - > 1996
- c) When is there a direct relationship between the poverty rate and unemployment rate?
- d) Is there ever an inverse relationship between the poverty rate and unemployment rate?

ANSWER:

- a) The poverty rates are:
 - 1987 13.4 percent
 - 1990 13.5 percent
 - 1995 13.8 percent
- b) The poverty rate/unemployment rate combinations are:
 - 1988 5.5 percent 13.1 percent
 - 1992 7.4 percent 14.5 percent
 - 1996 5.4 percent 13.7 percent
- c) There is a direct relationship between the poverty rate and unemployment rate in all years except 1993.
- d) There is an inverse relationship between the poverty rate and unemployment rate only in 1993.



6. The equation for a supply curve is $Q_s = -20 + 75P$. Complete the following table:

Price	1	2	3	4	5
Quantity Supplied					

- a) Graph the line shown in the table on the following graph. Label it S_2 .
- b) What is the slope of the line?
- c) What is Q_s if P = 8?
- d) What is Q_s if P = 20?



ANSWER:

Price	1	2	3	4	5
Quantity Supplied	55	130	205	280	355

a) Refer to the following graph



- b) Slope = rise/run = 1/75. A 1-unit increase in P leads to a 75-unit increase in Q_s .
- c) $Q_s = -20 + 75P = -20 + 75(8) = 580$.
- d) $Q_s = -20 + 75P = -20 + 75(20) = 1480.$



VII- Selected Exercises by Teacher:

1. Chapter 1 – Problem 3

Which of the following statements are examples of positive economic analysis? Which are examples of normative analysis?

- a) The inheritance tax should be repealed because it is unfair.
- b) Allowing Chile to join NAFTA would cause wine prices in the United States to drop.
- c) The first priorities of the new regime in the Democratic Republic of Congo (DRC formerly Zaire) should be to rebuild schools and highways and to provide basic health care.

ANSWER: Positive statements are testable; normative statements are opinions.

- a) Normative
- b) Positive
- c) Normative
- 2. Chapter 1 Problem 6

For each of the following situations, identify the full cost (opportunity cost) involved:

- a) A worker earning an hourly wage of \$8.50 decides to cut back to part-time to attend Houston Community College.
- b) Sue decides to drive to Los Angeles from San Francisco to visit her son, who attends UCLA.
- c) Tom decides to go to a wild fraternity party and stays out all night before his physics exam.
- d) Annie spends \$200 on a new dress.
- e) The Confab Company spends \$1 million to build a new branch plant that will probably be in operation for at least 10 years.
- f) Alex's father owns a small grocery store in town. Alex works 40 hours a week in the store but receives no compensation.

ANSWER:

- a) Salary foregone. \$8.50/hour spent at College.
- b) Assuming the alternative is staying at home (no cost), the opportunity cost is the gasoline and car depreciation.
- c) Opportunity cost is the difference between the grade he will actually get and the one he would have gotten had he spent the time studying, or indeed resting.
- d) \$200 and use an old dress in her closet.
- e) What is the next best alternative? Keep output as is for the next 10 years... So the OC is the \$1MM.
- *f)* The salary Alex could get from working outside the family business.
- 3. Chapter 1 Appendix Problem 3

For each of the following equations, graph the line and calculate its slope.

- a) $P = 10 2q_D$ (Put q_D on the X-axis)
- b) $P = 100 4q_D$ (Put q_D on the X-axis)
- c) $P = 50 + 6q_s$ (Put q_s on the X-axis)
- d) I = 10,000 500r (Put I the X -axis)

ANSWER:





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I- Chapter Review

- 1. Which of the following statements about the operation of an economy is FALSE?
 - a) Each economy has a mechanism to determine how to satisfy all of the desires of its citizens.
 - b) Each economy has a mechanism to determine what is produced.
 - c) Each economy has a mechanism to determine how goods and services are distributed among its citizens.
 - d) Each economy has a mechanism to determine how much is produced.

ANSWER: (a) Because resources are limited, no economy can satisfy all the desires of its citizens.

2. Selected Exercise by Teacher – Chapter 2 – Problem 4

Kristen and Anna live in the beach town of Santa !vlonica. They own a small business in which they make wristbands and pot holders and sell them to people on the beach. As shown in the table below, Kristen can make 15 wristbands per hour but only 3 pot holders. Anna is a bit slower and can make only 12 wristbands or 2 pot holders in an hour.

	Output per Hour								
	Wristbands	Pot Holders							
Kristen	15	3							
Anna	12	2							

- a) For Kristen and for Anna, what is the opportunity cost of a pot holder? Who has a comparative advantage in the production of pot holders? Explain your answer.
- b) Who has a comparative advantage in the production of wristbands? Explain your answer.
- c) Assume that Kristen works 20 hours per week in the business. Assuming Kristen is in business on her own, graph the possible combinations of pot holders and wristbands that she could produce in a week. Do the same for Anna.
- d) If Kristen devoted half of her time (10 out of 20 hours) to wristbands and half of her time to pot holders, how many of each would she produce in a week? If Anna did the same, how many of each would she produce? How many wristbands and pot holders would be produced in total?
- e) Suppose that Anna spent all 20 hours of her time on wristbands and Kristen spent 17 hours on pot holders and 3 hours on wristbands. How many of each item would be produced in total?
- f) Suppose that Kristen and Anna can sell all their wristbands for \$1 each and all their pot holders for \$5.50 each. If each of them worked 20 hours per week, how should they split their time between wristbands and pot holders? What is their maximum joint revenue?

ANSWER:

a) First, Kristen. She can produce 15 wristbands per hour, or she can make 3 pot holders. To get one additional pot holder she needs to work for 1/3 of an hour, and thus give up producing 15/3 = 5 wristbands. Thus, for Kristen, the opportunity cost of 1 pot holder is 5 wristbands.

As to Anna, she can produce 12 wristbands per hour, or she can make 2 pot holders. To get one additional pot holder she needs to work for 1/2 an hour, and thus give up producing 12/2 = 6 wristbands. Thus, for Anna, the opportunity cost of 1 pot holder is 6 wristbands. Kristen has a comparative advantage over Anna in the production of pot holders because she gives up only 5 wristbands for an additional pot holder, whereas Anna gives up 6 wristbands.

b) First, Kristen. She can produce 15 wristbands per hour, or she can make 3 pot holders. To get 60 additional wristbands she needs to work for 60/15 = 4 hours, and thus give up producing 4*3 = 12 pot holders. Thus, for Kristen, the opportunity cost of 60 wristbands is 12 pot holders.



As to Anna, she can produce 12 wristbands per hour, or she can make 2 pot holders. To get 60 additional wristbands she needs to work for 60/12 = 5 hours, and thus give up producing 5*2 = 10 pot holders. Thus, for Anna, the opportunity cost of 60 wristbands is 10 pot holders. Anna has a comparative advantage over Kristen in the production of wristbands because she gives up only 10 pot holders for 60 additional wristbands, whereas Kristen gives up 12 pot holders.

c) Kirsten's Wristbands versus Pot Holders Output:

	Kristen																				
Wristband Work Hours	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Wristbands Output	300	285	270	255	240	225	210	195	180	165	150	135	120	105	90	75	60	45	30	15	0
Pot Holders Work Hours	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Pot Holders Output	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
US\$	\$300	\$302	\$303	\$305	\$306	\$308	\$309	\$311	\$312	\$314	\$315	\$317	\$318	\$320	\$321	\$323	\$324	\$326	\$327	\$329	\$330





Anna's Wristbands versus Pot Holders Output:

	Anna																				
Wristband Work Hours	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Wristbands Output	240	228	216	204	192	180	168	156	144	132	120	108	96	84	72	60	48	36	24	12	0
Pot Holders Work Hours	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Pot Holders Output	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
US\$	\$240	\$239	\$238	\$237	\$236	\$235	\$234	\$233	\$232	\$231	\$230	\$229	\$228	\$227	\$226	\$225	\$224	\$223	\$222	\$221	\$220



- d) Kristen would produce 150 Wristbands and 30 Pot Holders. Anna would produce 120 Wristbands and 20 Pot Holders. In total 270 Wristbands and 50 Pot Holders would be produced.
- e) Anna produces 240 Wristbands, while Kristen produces 36 Wristbands and 34 Pot Holders. In total 276 Wristbands and 34 Pot Holders would be produced.
- f) The maximum income for Anna is when she produces only Wristbands (\$240). The maximum income for Kristen is when she produces only Pot Holders (\$330). The answer is therefore Anna produces only Wristbands and Kristen only Pot Holders, giving a maximum income of \$570.

Another way to look at it: The opportunity cost for Anna to produce one additional Pot Holder (\$5.5 more income) is 6 Wristbands (a loss of \$6). Each additional Pot Holder makes her earn \$0.5 less. She should therefore stick to producing Wristbands.

Kristen's opportunity cost to produce an additional Pot Holder (\$5.5 more income) is 5 Wristbands (a loss of \$5). Each additional Pot Holder makes her earn \$0.5 more. She should therefore stick to producing Pot Holders.

Anna has a comparative advantage in producing Wristbands, whereas Kristen has a comparative advantage in producing Pot Holders, and each should therefore specialize and combine outputs, although Kristen has an absolute advantage in producing both goods.

3. Selected Exercise by Teacher – Chapter 2 – Problem 6

The countries of Figistan and Blah are small island countries in the South Pacific. Both produce fruit and timber. Each island has a labor force of 1,200. The following table gives production per month for each worker in each country.



	Productivity per Worker per Month								
	Baskets of Fruit	Board Feet of Timber							
Figistan	10	5							
Blah	30	10							

- a) Which country has an absolute advantage in the production of fruit? Which country has an absolute advantage in the production of timber?
- b) Which country has a comparative advantage in the production of fruit? Of timber?
- c) Sketch the ppf's tor both countries.
- d) Assuming no trading between the two, if both countries wanted to have equal numbers of feet of timber and baskets of fruit, how would they allocate workers to the two sectors?
- e) Show that specialization and trade can move both countries beyond their ppf's.

ANSWER:

- a) Blah has an absolute advantage for both fruits and timber (both countries have 1,200 workers each).
- b) For fruits, Figistan can produce 10 x 1,200 = 12,000 baskets per month, or it can make 5 x 1,200 = 6,000 Bd Ft of Timber. To get 30 additional baskets of fruits (3 workers), Figistan has to give up 3 x 5 = 15 Bd Ft of Timber. Thus, for Figistan, the opportunity cost of 30 baskets of fruits is 15 Bd Ft of Timber.

As to Blah, it can produce $30 \times 1,200 = 36,000$ baskets per month, or it can make $10 \times 1,200 = 12,000$ Bd Ft of Timber. To get 30 additional baskets of fruits (1 worker), Blah has to give up 10 Bd Ft of Timber. Thus, for Blah, the opportunity cost of 30 baskets of fruits is 10 Bd Ft of Timber.

Blah has a comparative advantage over Figistan in the production of Fruits because it gives up only 10 Bd Ft of Timber for 30 baskets of fruit, whereas Figistan gives up 15 Bd Ft of Timber.

For Timber, to get 5 additional Bd Ft of Timber (1 worker), Figistan has to give up 10 Baskets of Fruit. Thus, for Figistan, the opportunity cost of 5 Bd Ft of Timber is 10 Baskets of Fruit.

As to Blah, to get 5 additional Bd Ft of Timber (1/2 worker), Figistan has to give up 15 Baskets of Fruit. Thus, for Figistan, the opportunity cost of 5 Bd Ft of Timber is 15 Baskets of Fruit.

Figistan has a comparative advantage over Blah in the production of Timber because it gives up only 10 baskets of fruit for 5 Bd Ft of Timber, whereas Blah gives up 15 Baskets of Fruit.



c) Refer to the following graph:



d) Refer to the following graph:



e) In Figistan, production of fruits is twice as efficient as timber. For production to remain equal, each time we appoint one worker to fruits, two have to work on timber. So each production



"team" will consist of 2 + 1 = 3 workers. The 1,200 workers would then be divided in 1,200 / 3 = 400 teams of 3 workers each. Each team produces 10 baskets of fruits and 10 Bd Ft of Timber. The total production becomes $400 \times 10 = 4,000$ baskets of fruits and $400 \times 2 \times 5 = 4,000$ Bd Ft of Timber (pt. D).

In Blah, production of fruits is three times as efficient as timber. For production to remain equal, each time we appoint one worker to fruits, three have to work on timber. So each production "team" will consist of 3 + 1 = 3 workers. The 1,200 workers would then be divided in 1,200 / 4 = 300 teams of 4 workers each. Each team produces 30 baskets of fruits and 30 Bd Ft of Timber. The total production becomes $300 \times 30 = 9,000$ baskets of fruits and 9,000 Bd Ft of Timber (pt. A).

f) If Figistan specialized in Timber, and Blah in fruits, and if Blah traded with Figistan 10,400 Baskets of Fruits for Timber, Figistan would give Blah 10,400 / 2 = 5,200 Bd Ft of Timber. This is beyond Blah's ppf (pt. B). Figistan would not lose, and would remain on its ppf at the point (10,400; 800) (pt. F).

Alternatively, if Figistan then traded with Blah 1,500 Bd Ft of Timber for Fruits, Blah would give Figistan 1,500 x 3 = 4,500 Baskets of Fruit. This is beyond Figistan's ppf (pt. E). Blah would not lose, and would remain on its ppf at the point (31,500; 1,500) (pt. C).

4. Farmer Brown has four fields that can produce either corn or tobacco. Assume that the marginal rate of transformation between corn and tobacco *within* each field is constant. The maximum yields for each field are given in the following table. Field A, for instance, can produce 40 units of corn and no tobacco or, as another alternative, no corn and 10 units of tobacco.

Field	А	В	С	D
Corn	40	30	20	10
Tobacco	10	20	30	40

- a) Draw Farmer Brown's production possibility frontier.
- b) To be on the production possibility frontier, what conditions must hold true?
- c) Brown is currently producing only corn: If he wants to produce some tobacco, in what order would he switch his fields from corn to tobacco production?
- d) Explain your answer to (c).

ANSWER: If all fields are devoted to corn, we have 100 units of corn, and none of tobacco. We should switch fields to tobacco in increasing order of opportunity cost for Tobacco. D, C, B, A!

a) If field D turns to tobacco, we now have 90 units of corn and 40 of tobacco. Field C to tobacco, we now have 70 units of corn and 70 of tobacco. Field B to tobacco, we now have 40 units of corn and 90 of tobacco. All fields to tobacco, we now have no unit of corn and 100 of tobacco:

Corn	100	90	70	40	0
Tobacco	0	40	70	90	100

The Farmer Brown's Production Possibility Frontier becomes:





- b) Resources are fully employed and employed in the more efficient activity. For example, Field A may be producing its maximum output of tobacco, but (because the opportunity cost of tobacco production in that field is high) it should be used to produce tobacco only after the other fields have been switched over to tobacco production. If it is switched before Field B, for instance, Brown will be producing inefficiently and inside his PPF.
- c) As we said above, D, C, B, A.
- d) Refer to the explanations above.
- 5. Refer to the following diagram:



- a) Which point is unattainable?
- b) To achieve this currently unattainable production combination, what must happen (two possible answers)?
- c) Which point represents unemployment or inefficiency?
- d) Will a movement from *B* to *A* increase corn production or steel production?
- e) What is the opportunity cost of moving from C to B?

ANSWER:

a) D



- b) The economy must either grow (more resources) or experience a technological improvement.
- c) C
- d) Corn
- e) There is no opportunity cost; more steel is produced without any reduction in corn production. Note that there are "free lunches" if the economy is operating at an inefficient point.
- II- Use the following information to answer the next five questions. Barack and Michelle live on an island in the Caribbean. Their diet is fish and biscuits. Barack can bake 20 biscuits or spear 10 fish each day, while Michelle can bake 48 biscuits or spear 12 fish each day. For each person, costs remain constant.
 - 1. Which of the following statements is **false**?
 - a) For Barack, the opportunity cost of 1 fish is 2 biscuits forgone.
 - b) For Michelle, the opportunity cost of 1 fish is 4 biscuits forgone.
 - c) The opportunity cost of 1 fish is greater for Michelle than for Barack.
 - d) An increase in Barack's production of fish requires a decrease in Michelle's production of biscuits.

ANSWER: (d) An increase in Barack's production of fish requires a decrease in Barack's production of biscuits. In fact, both Barack and Michelle might choose independently to increase fish production.

- 2. Which of the following statements is true?
 - a) For Barack, the opportunity cost of 1 biscuit is 2 fish forgone.
 - b) For Michelle, the opportunity cost of 1 biscuit is 4 fish forgone.
 - c) The opportunity cost of 1 biscuit is greater for Michelle than for Barack.
 - d) The opportunity cost of 1 biscuit is greater for Barack than for Michelle.

ANSWER: (d) For Barack, the opportunity cost of a biscuit is 1/2 of a fish forgone, and for Michelle, the opportunity cost of a biscuit is 1/4 of a fish forgone.

- 3. According to the preceding information,
 - a) Barack has a comparative advantage in the production of both goods.
 - b) Barack has a comparative advantage in producing fish, and Michelle has a comparative advantage in producing biscuits.
 - c) Barack has a comparative advantage in producing biscuits, and Michelle has a comparative advantage in producing fish.
 - d) Michelle has a comparative advantage in the production of both goods.

ANSWER: (b) Barack has a comparative advantage in the production of fish (1 fish costs 2 biscuits forgone), and Michelle has a comparative advantage in the production of biscuits (1 biscuit costs 1/4 of a fish forgone). Note: neither person can be relatively better at producing both goods!

- 4. Which of the following statements is **false**?
 - a) If Barack spent half his time fishing and the other half baking, he could produce 10 biscuits and 5 fish each day.
 - b) If Michelle spent half her time fishing and the other half baking, she could produce 24 biscuits and 6 fish each day.
 - c) If Barack and Michelle specialized according to comparative advantage, they could produce 34 biscuits and 11 fish each day.
 - d) If Barack and Michelle specialized according to comparative advantage, they could produce 48 biscuits and 10 fish each day.

ANSWER: (c) Barack should produce fish, and he can spear 10 each day. Michelle should produce biscuits, and she can bake 48 each day. Option (c) is incorrect because it fails to take account of the effects of comparative advantage.



- 5. Barack and Michelle specialize according to comparative advantage and trade at a rate of 1 fish for 3 biscuits. Barack sells Michelle 5 fish. Which of the following statements is true?
 - a) Barack gains from trade but Michelle does not, because Barack's opportunity cost for producing fish is greater than 3 biscuits per fish.
 - b) Barack gains from trade but Michelle does not, because Barack's opportunity cost for producing fish is less than 3 biscuits per fish.
 - c) Both Barack and Michelle gain from trade, because each attains a consumption level impossible without trade.
 - d) Both Barack and Michelle gain from trade, because each is able to maximize their resources.

ANSWER: (c) Barack's opportunity cost for producing fish is less than 3 biscuits per fish, so he gains from trade. However, Michelle also gains because her opportunity cost of producing biscuits is less than 1/3 of a fish. Barack ends up with 5 fish and 15 biscuits and Michelle ends up with 5 fish and 33 biscuits.

- III- Select the option that provides the single best answer.
 - 1. 1. Because the nation of Arboc is operating at a point inside its production possibility frontier, it
 - a) Has full employment.
 - b) Has unemployed or inefficiently employed resources.
 - c) Must cut output of one good to increase production of another.
 - d) Will be unable to experience economic growth.

ANSWER: (b) To be on the production possibility frontier, Arboc must have all of its resources fully and efficiently employed. Because it is operating inside the production possibility frontier, at least one of these conditions must have been violated.

- 2. Arboc commits more of its resources to capital production than does Arbez. ______ should experience a ______ rapid rate of economic growth.
 - a) Arboc; more
 - b) Arbez; more
 - c) Arboc; less
 - d) Both; equally

ANSWER: (a) If Arboc produces relatively more capital, then it is expanding its resource base more rapidly and, ceteris paribus, it will grow more rapidly.

- 3. Which of the following does not count as a productive resource?
 - a) Capital resources, such as a tractor
 - b) Natural resources, such as a piece of farmland
 - c) Financial resources, such as a \$20 bill
 - d) Human resources, such as a hairdresser

ANSWER: (c) Financial resources may be used to purchase real productive resources, but are not themselves productive. Note that, to an economist, "investment" is the creation of real productive capacity, not merely the purchase of stock in a company.

- 4. A production possibility frontier diagram illustrates all of the following concepts EXCEPT
 - a) Scarcity.
 - b) Unlimited wants.
 - c) Constrained choice.
 - d) The marginal rate of transformation.



ANSWER: (b) The production possibility frontier depicts what it is possible to produce but nothing about what is wanted.

- 5. Of the following, the least serious problem for laissez-faire economies is
 - a) Unemployment.
 - b) Income inequality.
 - c) Inflation.
 - d) Satisfaction of consumer sovereignty.

ANSWER: (d) Laissez-faire economies generally respond well to the needs of private consumers.

- 6. Which of the following is most likely to shift the production possibility frontier outward?
 - a) A sudden expansion in the labor force
 - b) An increase in stock prices
 - c) A shift of productive resources from capital goods to consumer goods
 - d) A general increase in the public's demand for goods

ANSWER: (a) The labor-force expansion represents an increase in productive resources. Note that the production possibility frontier depicts what can be supplied—demand is not reflected in the diagram.

- 7. Which of the following is not one of the basic economic questions?
 - a) What will be produced?
 - b) How will it be priced?
 - c) How will it be produced?
 - d) Who will get what is produced?

ANSWER: (b) The Three Basic Questions: Every society has some system or process that transforms its scarce resources into useful goods and services. In doing so, it must decide what gets produced, how it is produced, and to whom it is distributed. The primary resources that must be allocated are land, labor, and capital.

- 8. Private markets work best when
 - a) They are competitive.
 - b) They are regulated by a government agency.
 - c) A monopolist is present.
 - d) Consumer sovereignty is restricted.

ANSWER: (a) A general theme in economics is that private competition is highly efficient in providing most goods.

- 9. Arboc has an increasing-cost production possibility frontier. Its slope must be
 - a) Positive and increasing.
 - b) Positive and decreasing.
 - c) Negative and increasing.
 - d) Negative and decreasing.

ANSWER: (c) With scarce resources, the production possibility frontier will always have a negative slope. With an increasing-cost production possibility frontier, the cost of producing one good in terms of the other accelerates as production level increases.

- 10. For Jill to have a comparative advantage in the production of pins means that with the same resources and relative to Jack,
 - a) Jill is relatively better at producing pins than at producing needles.



- b) Jill is relatively better at producing both pins and needles.
- c) Jill can produce fewer needles than Jack can produce.
- d) Jill can produce more pins than Jack can produce.

ANSWER: (a) Comparative advantage is a relative concept. If, relative to Jack, Jill is better at producing pins, then she has a comparative advantage in this.

- 11. Each of the following is a basic concern of any economic system EXCEPT the
 - a) Allocation of scarce resources among producers.
 - b) Mix of different types of output.
 - c) Distribution of output among consumers.
 - d) Quality of resources allocated among consumers.

ANSWER: (d) The first three answers are statements of the three "basic" questions. In any case, resources are allocated among producers, not consumers.

12. The following table shows the maximum output of each good in each country, e.g. maximum Arbezani production of goat milk is 6 units.

	Arboc	Arbez
Goat Milk	3	6
Bananas	5	2

According to the preceding table,

- a) Arboc has a comparative advantage in producing both goods.
- b) Arboc has a comparative advantage in the production of bananas, and Arbez has a comparative advantage in the production of goat milk.
- c) Arboc has a comparative advantage in the production of goat milk, and Arbez has a comparative advantage in the production of bananas.
- d) Arbez has a comparative advantage in the production of both goods.

ANSWER: (b) The cost of one unit of goat milk in Arboc is 5/3 units of bananas whereas the cost of one unit of goat milk in Arbez is 1/3 unit of bananas. Arbez has the advantage in goat milk. One unit of bananas in Arboc costs 3/5 unit of goat milk whereas one unit of bananas in Arbez costs 3 units of goat milk. Arboc has the advantage in banana.

- 13. The nation of Regit has a bowed-out production possibility frontier with potatoes on the vertical axis and steel on the horizontal axis. A movement down along the PPF will incur ______ opportunity costs in the production of steel; a movement up along the PPF will incur ______ opportunity costs in the production of potatoes.
 - a) Increasing; increasing
 - b) Increasing; decreasing
 - c) Decreasing; increasing
 - d) Decreasing; decreasing

ANSWER: (a) A bowed-out production possibility frontier indicates increasing costs; the costs increase whether the movement is down along the PPF or up along the PPF.



IV- Use the following diagram to answer the next four questions.



- 1. Point *E* might become attainable if this economy
 - a) Reduces prices.
 - b) Reduces wages.
 - c) Improves the quality of its workforce.
 - d) Encourages emigration.

ANSWER: (c) To reach Point E the economy must grow, shifting out its production possibility frontier. This could occur if the labor force became more efficient.

- 2. A movement from A to B and then to C indicates that the
 - a) Cost of additional butter is decreasing.
 - b) Cost of additional guns is increasing.
 - c) Economy is becoming more efficient.
 - d) Cost of additional butter is increasing.

ANSWER: (d) This is an increasing-cost production possibility frontier. As we increase the production of one good (butter), the cost in terms of the other good increases. In this case, a one-unit increase in butter (A to B) costs 3 guns; the move from B to C costs more (4 guns).

- 3. To move from *D* to *A* indicates that
 - a) The opportunity cost would be zero.
 - b) Some butter would have to be given up.
 - c) There would have to be an increase in the quantity of resources.
 - d) The opportunity cost would be 7 guns forgone.

ANSWER: (a) Opportunity cost is defined (loosely) as the quantity of Good B given up to increase production of Good A. The quantity of butter remains at 1 unit, and gun production is increased.

- 4. The opportunity cost of producing another unit of butter is
 - a) Higher at B than at C.
 - b) Lower at D than at C.
 - c) Higher at A than at B.
 - d) Equal at D and at C.

ANSWER: (b) Refer to the answer to Question 6. Opportunity cost of one unit of butter is 0 at Point D. The opportunity cost of one unit of butter at Point C is 5 guns.



V- Use the following production possibility table to answer the next three questions. Suppose that wheat is on the Y-axis.

Alternative	А	В	С	D	E	F
Wheat	0	1	2	3	4	5
Tobacco	15	14	12	9	5	0

- 1. The marginal rate of transformation of a unit of wheat as the economy moves from C to D is
 - a) 1/3 unit of tobacco production forgone.
 - b) 3 units of tobacco production forgone.
 - c) 9 units of tobacco production forgone.
 - d) 12 units of tobacco production forgone.

ANSWER: (b) A one-unit increase in wheat results in a three-unit decrease in tobacco production.

- 2. The marginal rate of transformation of a unit of tobacco as the economy moves from *C* to *B* is
 - a) 1/2 unit of wheat production forgone.
 - b) 1 unit of wheat production forgone.
 - c) 2 units of wheat production forgone.
 - d) 12 units of wheat production forgone.

ANSWER: (a) A two-unit increase in tobacco results in a one-unit decrease in wheat.

- 3. An output of 3 units of wheat and 7 units of tobacco indicates that
 - a) This economy has poor technology.
 - b) Resources are being used inefficiently.
 - c) Tobacco is preferred to wheat.
 - d) It is not possible for this economy to produce at a point on the production possibility frontier.

ANSWER: (b) This point is inside the production possibility frontier. (We could be producing two more units of tobacco with the same amount of wheat production, for example.) This indicates that our resources are unemployed and/or inefficiently employed.