Basic Economic Concepts

Opportunity Cost

1. The country of Musicstan produces two goods: mp3 players and music downloads. Points on a production possibilities curve appear below:

Musicstan Production	A	B	C	D	E
mp3 Players	0	100	200	300	400
Music downloads	70,000	60,000	45,000	25,000	0

A. Calculate the opportunity cost of increasing the number of mp3 players produced from 0 to 100. **10,000 music downloads**

B. Calculate the opportunity cost of increasing the number of mp3 players produced from 200 to 300. **20,000 music downloads**

C. Give two specific examples of what would have to happen for Musicstan to expand its production possibilities frontier.

- **Improve the technology that goes into making mp3 players**
- **Increase the factors of production (land, labor, capital)**
- **Anything that improves productivity (adding to either human capital or physical capital)**

2. An economy produces two goods: capital goods and consumer goods. Points on the production possibilities curve appear below:

Production alternatives	*V*	*W*	*X*	*Y*	*Z*
Capital goods per period	0	1	2	3	4
Consumer goods per period	20	18	14	8	0

A. If the economy is producing at alternative *X*, the opportunity cost of producing at *Y* instead of *X* is _____ units of consumer goods per period.
   a. 0
   b. 11
   c. 8
   d. 14
   e. 6

B. If an economy is producing at alternative W, the opportunity cost of producing at X is _____ unit(s) of consumer goods per period.
   a. 0
   b. 1
   c. 4
   d. 18
   e. 2

C. The production of 14 units of consumer goods and 1 unit of capital goods per period would:
   a. result in full employment.
   b. result in no unused resources.
   c. result in some unused or inefficiently used resources.
   d. increase economic growth.
   e. be impossible, given current levels of technology and economic resources.

Marginal Analysis

Degree Earned and Expected Lifetime Earnings

Degree Earned	Expected Lifetime Earnings by Degree	Expected Lifetime Costs by Degree
High School	$ 800,000	$ 0
Associate	1,200,000	25,000
Bachelor's	2,000,000	100,000
Master's	2,100,000	200,000
Doctorate	2,500,000	2,500,000

3. Assuming that inflation and interest rates are incorporated into the data above, what is the optimal degree for this person to earn? Explain how you came to your conclusion.

   Master's degree since the marginal benefit = $100,000 and the marginal cost = $100,000. It does not make sense to earn a doctorate because the MB = $400,000 but the MC = $2,300,000.

4. Teachers are usually displeased when students cheat on tests. The faculty proposes three alternatives to try and limit cheating at school. Which of these methods intended to stop cheating would be most effective? Why?

   (A) Teachers should say nothing and trust the students to be fair. If people are treated responsibly, they will act responsibly.
   (B) Teachers should give lectures on morality and explain to the students how their actions are not only dishonest but may hurt their classmates.
   (C) Teachers should walk around the room when giving tests, give the students alternate tests and make sure the students understand they will fail if they are caught cheating.

   Only (C) involves opportunity costs for the student who is cheating. For some people, the opportunity cost of cheating is their conscience. Students compare benefits and costs when contemplating cheating. For those with weak consciences, other costs must be substituted to discourage them. If the costs of cheating are greater than the benefits, cheating will not occur.

5. Consider a group of small or large electronic items that you have thought about buying. Do you always choose the highest-priced goods? Should you always choose the lowest-priced goods? Explain your answer.

   People frequently don't purchase the highest-priced goods because the marginal benefit of the highest quality is not worth the additional cost. It also means that you shouldn't always purchase the lowest-priced goods, either. As long as the MB > MC then you should continue purchasing more expensive (and presumably higher-quality) goods.

6. If you wanted to eliminate "senioritis," how would you change the college-acceptance process and/or the incentives offered by high school instructors?

   You could make college acceptance conditional on work during the entire senior year. This would raise the cost of senioritis and provide an incentive for seniors to study harder.

7. It is said that "A job well-done is a job done well." One might conclude then that doing your utmost at something is the best approach. However, why might an economist argue that it makes sense for janitors to leave at least some dust on the floors each night?

   If the marginal benefit of getting that last piece of dust is less than the marginal cost of collecting the dust then it is not economically efficient to do it. The janitor needs to balance the additional cleanliness with the additional effort to decide how much to clean.

Comparative Advantage

8. The following figures represent the amount that can be produced with a fixed amount of factor inputs.

Country	Shirts	TVs
China	400	200
India	120	30

A. Which country has an absolute advantage in producing shirts? **China**

B. Which country has an absolute advantage in producing TVs? **China**

C. What is China's opportunity cost for producing one shirt? **1/2 TVs**

D. What is India's opportunity cost for producing one TV? **4 shirts**

E. Identify which country has a comparative advantage in shirts? **India because it gives up 1/4 of a TV for every shirt, while China gives up 1/2 of a TV for every shirt.**

F. Which country has the comparative advantage in TV? **China because it gives up fewer shirts (2) for every TV produced than India, which gives up 4 shirts for every TV.**

G. Explain why these countries can benefit from trade. **Both countries could conceivably increase the amount of both goods available to them.**

9. The following table provides information about Andy and Hannah and the time it takes each of them to clean an office and clean a jail cell. (**HINT:** You may want to determine the number of each location that Andy and Hannah can clean in a given time period to help determine opportunity cost.)

Person	Clean Offices	Clean Cells
Andy	30 min	180 min
Hannah	15 min	45 min

A. What is Andy's opportunity cost of cleaning offices in terms of cleaning jail cells? **He loses 1/6 of a cell for every office he cleans.**

B. What is Hannah's opportunity cost of cleaning offices in terms of cleaning jail cells? **She loses 1/3 of a cell for every office she cleans**

C. What is Andy's opportunity cost of cleaning jail cells in terms of cleaning offices? **He loses 6 offices for every cell he cleans**

D. What is Hannah's opportunity cost of cleaning jail cells in terms of cleaning offices? **She loses 3 offices for every cell she cleans**

E. Who has the absolute advantage in cleaning offices? **Hannah because she can clean offices faster**

F. Who has the absolute advantage in cleaning jail cells? **Hannah because she can clean offices faster**

G. Who has the comparative advantage in cleaning offices? **Andy (his OC is less than Hannah's)**

H. Who has the comparative advantage in cleaning jail cells? **Hannah (her OC is less than Andy's)**

I. Who should do which chore and why? Base your answer only on the information above and on comparative-advantage considerations.

Andy should clean offices and Hannah should clean jail cells.

10. Sweden and Finland produce only two goods, herring and cell phones, and this table shows the maximum amount that each nation can produce of the two goods.

Country	Herring	Cell Phones
Sweden	100,000	10,000
Finland	50,000	10,000

A. Sweden has an absolute advantage in producing:
   a. cell phones only.
   b. a combination of cell phones and herring.
   c. both cell phones and herring.
   d. neither cell phones nor herring.
   e. herring only.

B. Finland has an absolute advantage in producing:
   a. cell phones only.
   b. herring only.
   c. both cell phones and herring.
   d. neither cell phones nor herring.
   e. a combination of cell phones and herring.

C. Sweden has a comparative advantage in producing:
   a. cell phones only.
   b. herring only.
   c. both cell phones and herring.
   d. neither cell phones nor herring.
   e. a combination of cell phones and herring.

D. Finland has a comparative advantage in producing:
   a. cell phones only.
   b. herring only.
   c. both cell phones and herring.
   d. neither cell phones nor herring.
   e. a combination of cell phones and herring.

E. The opportunity cost of producing 1 unit of cell phones for Sweden is:
   a. 10 units of herring.
   b. 1/5 unit of herring.
   c. 5 units of herring.
   d. 1/10 unit of herring.
   e. 10 units of cell phones.

F. The opportunity cost of producing 1 unit of cell phones for Finland is:
   a. 10 units of herring.
   b. 1/5 unit of herring.
   c. 5 units of herring.
   d. 1/10 unit of herring.
   e. 5 units of cell phones.

G. The opportunity cost of producing 1 unit of herring for Sweden is:
   a. 10 units of cell phones.
   b. 1/5 unit of cell phones.
   c. 5 units of cell phones.
   d. 1/10 unit of cell phones.
   e. 10 units of herring.

H. The opportunity cost of producing 1 unit of herring for Finland is:
   a. 10 units of cell phones.
   b. 1/5 unit of cell phones.
   c. 5 units of cell phones.
   d. 1/10 unit of cell phones.
   e. 5 units of herring.

Scarcity, Opportunity Cost and Production Possibilities Curves

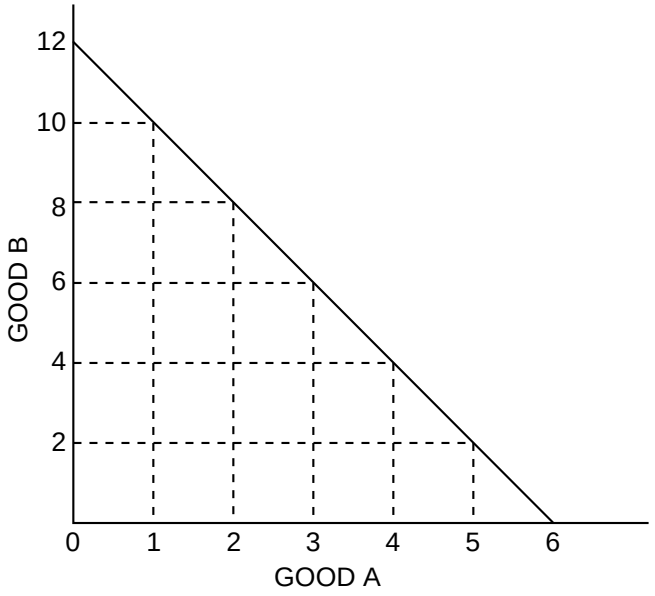
Scarcity necessitates choice. Consuming or producing more of one thing means consuming or producing less of something else. The opportunity cost of using scarce resources for one thing instead of something else is often represented in graphical form as a *production possibilities curve.*

Part A

Use Figures 2.1 and 2.2 to answer these questions. Write the correct answer on the answer blanks, or underline the correct answer in parentheses.

Figure 2.1

Production Possibilities Curve 1



1. If the economy represented by Figure 2.1 is presently producing 12 units of Good B and zero units of Good A:

   (A) The opportunity cost of increasing production of Good A from zero units to one unit is the loss of ___*two*___ unit(s) of Good B.

   (B) The opportunity cost of increasing production of Good A from one unit to two units is the loss of ___*two*___ unit(s) of Good B.

   (C) The opportunity cost of increasing production of Good A from two units to three units is the loss of ___*two*___ unit(s) of Good B.

   (D) This is an example of (***constant*** / increasing / decreasing / zero) opportunity cost per unit for Good A.

Part B

Use the axes in Figures 2.3, 2.4 and 2.5 to draw the type of curve that illustrates the label above each axis.

Figure 2.3
Production Possibilities Curve 3
Increasing opportunity cost per unit of Good B

Figure 2.4
Production Possibilities Curve 4
Zero opportunity cost per unit of Good B

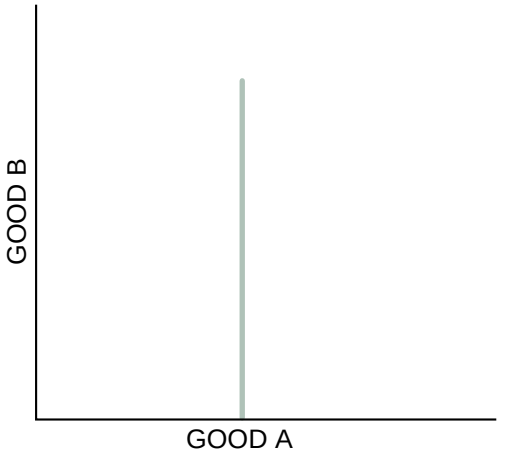
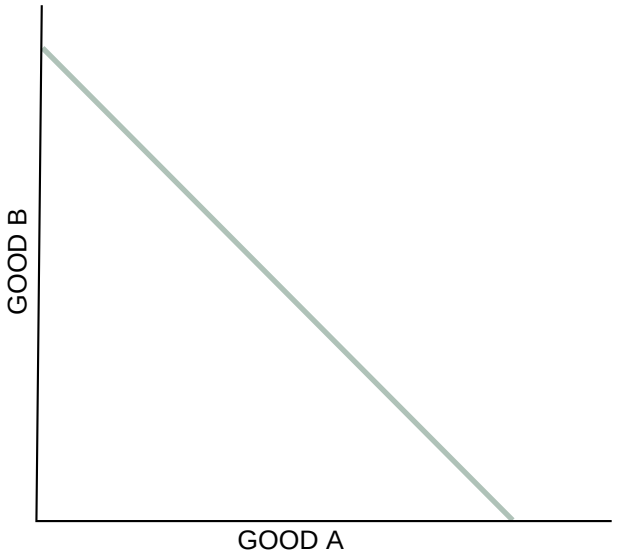


Figure 2.5
Production Possibilities Curve 5
Constant opportunity cost per unit of Good B

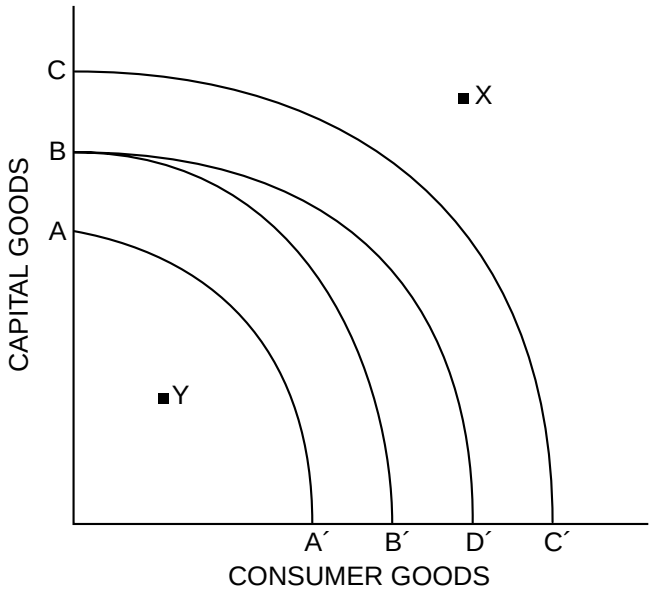


Part C

Use Figure 2.6 to answer the next five questions. Each question starts with Curve BB' as a country's production possibilities curve.

Figure 2.6

Production Possibilities Curve: Capital Goods and Consumer Goods



3. Suppose there is a major technological breakthrough in the consumer-goods industry, and the new technology is widely adopted. Which curve in the diagram would represent the new production possibilities curve? (Indicate the curve you choose with two letters.) ___*BD'*___

4. Suppose a new government comes into power and forbids the use of automated machinery and modern production techniques in all industries. Which curve in the diagram would represent the new production possibilities curve? (Indicate the curve you choose with two letters.) ___*AA'*___

5. Suppose massive new sources of oil and coal are found within the economy, and there are major technological innovations in both industries. Which curve in the diagram would represent the new production possibilities curve? (Indicate the curve you choose with two letters.) ___*CC'*___

6. If BB' represents a country's current production possibilities curve, what can you say about a point like X? (Write a brief statement.) ***It is impossible for a country by itself to attain with existing resources and technology.***

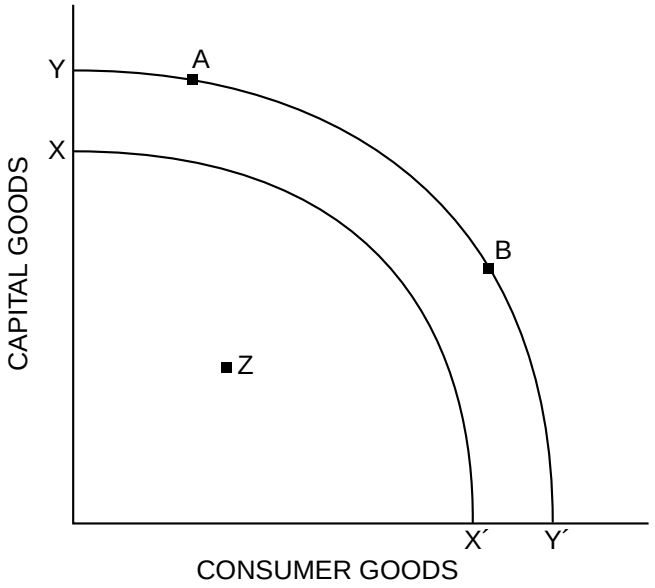
7. If BB' represents a country's current production possibilities curve, what can you say about a point like Y? (Write a brief statement.) ***The economy is not fully using existing resources and technology. An example of Point Y is the Great Depression of the 1930s.***

Part D

Use Figure 2.7 to answer the next three questions.

Figure 2.7

Production Possibilities Curve: Capital Goods and Consumer Goods



8. What change could cause the production possibilities curve to shift from the original curve (XX') to the new curve (YY')? ***New resources are discovered. New technologies are developed.***

9. Under what conditions might an economy be operating at Point Z?
Resources are not being fully employed.

10. Why might a government implement policy to move the economy from Point B to Point A?
The government might want to emphasize the production of capital goods so the economy would grow more in the future. This would shift the PPC outward in the future.