Answers to Text Questions and Problems

Answers to Review Questions

1. An individual has a comparative advantage in the production of a particular good if she can produce it at a lower opportunity cost than other individuals. An individual has an absolute advantage in the production of a good if she can produce more of that good than another individual, using comparable amounts of time, raw materials and effort.
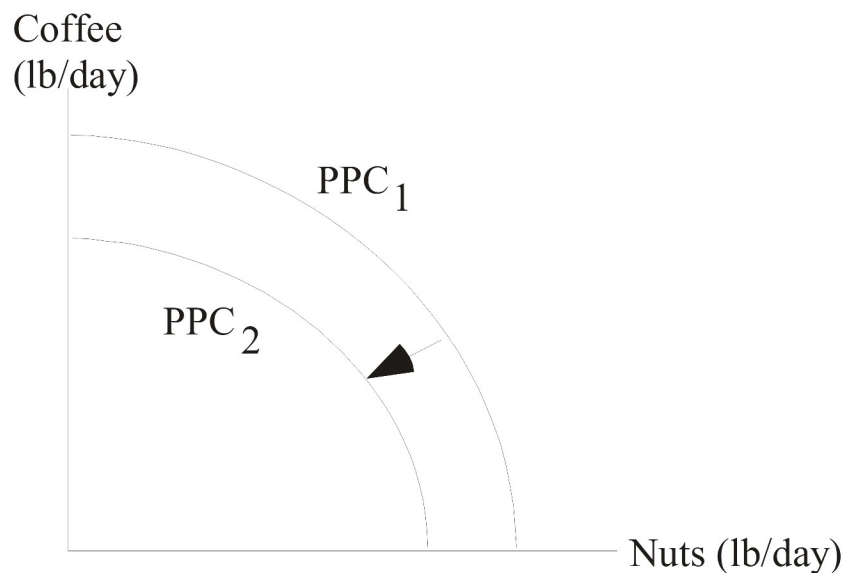LO: 1
AACSB: Analytical Skills
Bloom's: Understanding

2. A reduction in the number of hours worked each day will shift all points on the production possibilities curve inward, toward the origin. The graph below illustrates this situation.
LO: 3
AACSB: Analytical Skills
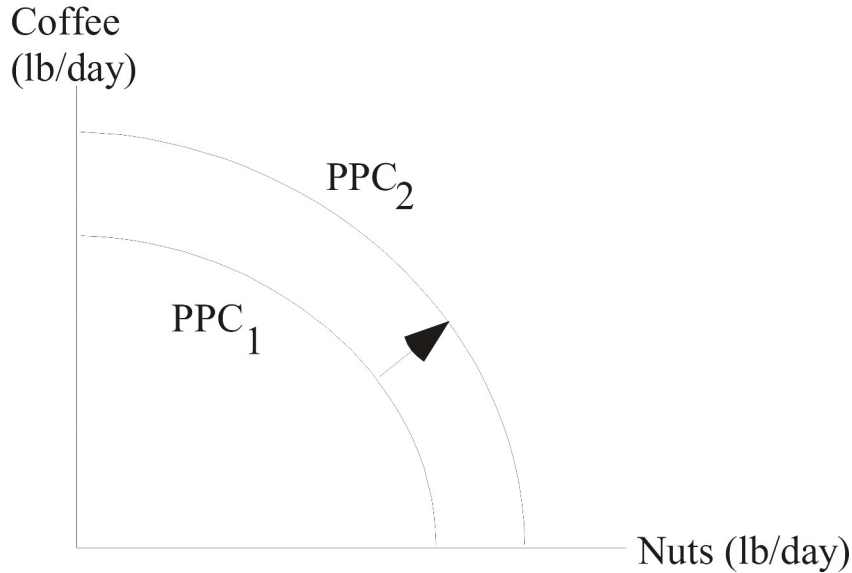Bloom's: Application

3. Technological innovations that boost labor productivity will shift all points on the production possibilities curve outward, away from the origin. The graph below illustrates this situation.
LO: 3
AACSB: Analytical Skills
Bloom's: Application

Coffee
(lb/day)

PPC$_2$

PPC$_1$

Nuts (lb/day)

4. According to Principle of Comparative Advantage, people will perform their own services when the opportunity cost of doing so is low. This implies that performing services yourself is not a matter of whether you are rich or poor but is a matter of whether the opportunity cost of your time is high or low.
LO: 1
AACSB: Analytical Skills
Bloom's: Analysis

5. The fact that English has become the *de facto* international language has done much to stimulate international demand for American-made books, movies and popular music. The large size of the American market has given the United States an additional advantage over other English-speaking countries, like England, Canada, and Australia.
LO: 4
AACSB: Analytical Skills
Bloom's: Analysis

Answers to Problems

1. In time it takes Ted to wash a car he can wax one-third of a car. So his opportunity cost of washing one car is one-third of a wax job. In the time it takes Tom to wash a car, he can wax one-half of a car. So his opportunity cost of washing one car is one-half of a wax job. Because Ted's opportunity cost of washing a car is lower than Tom's, Ted has a comparative advantage in washing cars.
LO: 1
AACSB: Analytical Skills
Bloom's: Application

2. In time it takes Ted to wash a car he can wax three cars. So his opportunity cost of washing one car is three wax jobs. In the time it takes Tom to wash a car, he can wax

two cars. So his opportunity cost of washing one car is two wax jobs. Because Tom's opportunity cost of washing a car is lower than Ted's, Tom has a comparative advantage in washing cars.

LO: 1
AACSB: Analytical Skills
Bloom's: Application

3. Kyle and Toby each must give up 2 gallons of cider in order to produce 1 pound of cheese. Thus, since they face the same opportunity cost of producing one pound of cheese, they cannot gain from specialization and trade.

LO: 1
AACSB: Analytical Skills
Bloom's: Application

4. In the time it takes Nancy to replace a set of brakes she can complete one-half of a clutch replacement; her opportunity cost of replacing a set of brakes is therefore one-half of a clutch replacement. In the time it takes Bill to replace a set of brakes, he can he can complete one-third of a clutch replacement; his opportunity cost of replacing a set of brakes is therefore one-third of a clutch replacement. Bill's opportunity cost of replacing a set of brakes is lower than Nancy's, so Bill has a comparative advantage in replacing brakes. This also implies that Nancy has a comparative advantage in replacing clutches. Finally, Nancy has an absolute advantage over Bill in replacing clutches since it takes her two hours less than it takes Bill to perform that job. Since each takes the same amount of time to replace a set of brakes, neither person has an absolute advantage in that task.
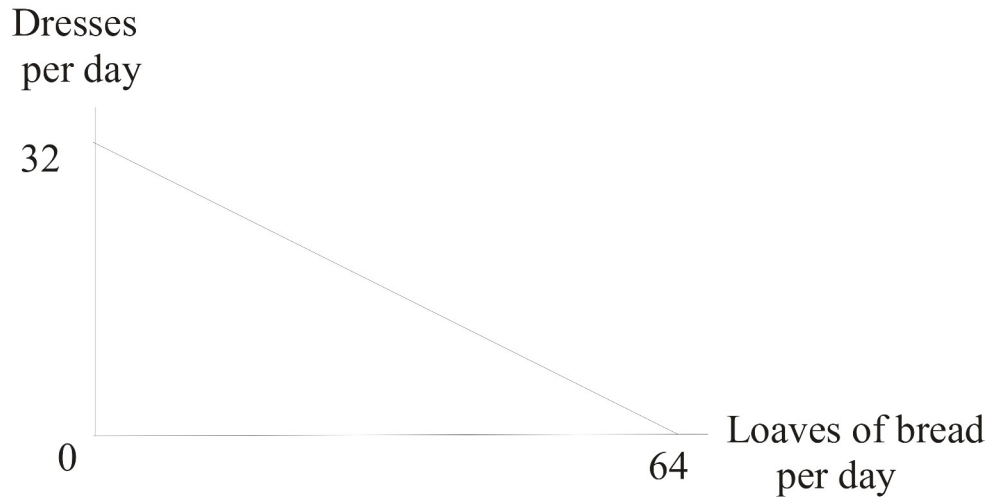
LO: 1
AACSB: Analytical Skills
Bloom's: Application

5. Graph is given below.
LO: 3
AACSB: Analytical Skills
Bloom's: Application

Dresses
per day

32

0   64   Loaves of bread
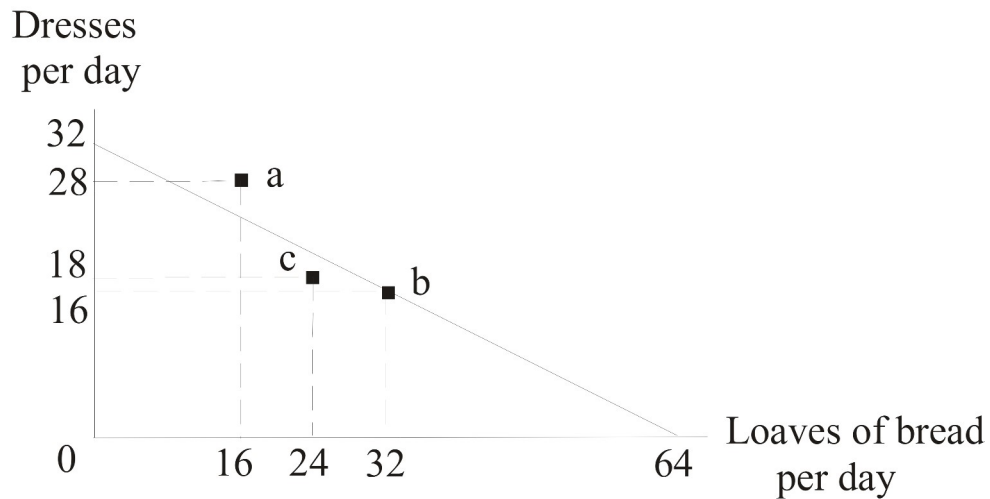   per day

6. Point a is unattainable. Point b is efficient and attainable. Point c is inefficient and attainable. See graph below for illustration.
LO: 3
AACSB: Analytical Skills
Bloom's: Application

Dresses
per day

32
28   ▪ a

18   c
16   ▪   ▪ b

0   16   24   32   64   Loaves of bread
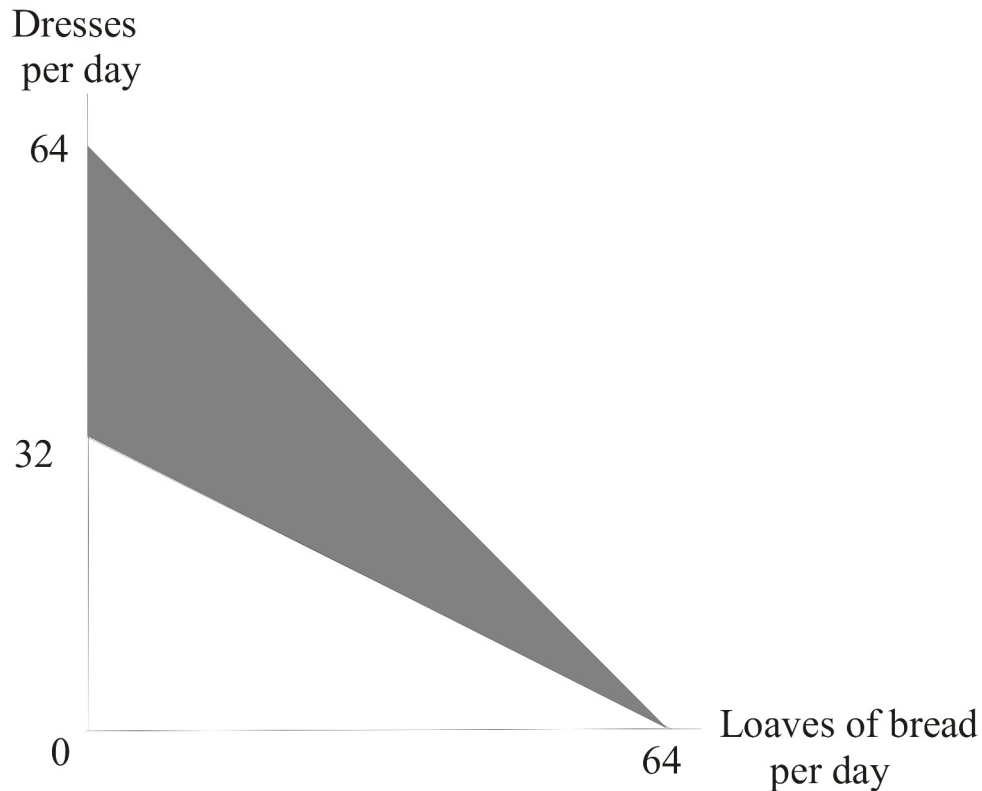   per day

7. The new machine doubles the value of the vertical intercept of Helen's PPC. This is shown on the graph below.
LO: 3
AACSB: Analytical Skills

Dresses
per day

64

32

0

64

Loaves of bread
per day

8. The upward rotation of Helen's PPC means that she is now able for the first time to produce and any of the points in the shaded region of the graph above. Note that her menu of opportunity increased with respect to dresses *and* with respect to bread as well.

LO: 3
AACSB: Analytical Skills
Bloom's: Application

9.
  a. Their maximum possible coffee output is 36 pounds per day (12 from Tom, 24 from Susan).
  b. Their maximum possible output of nuts is also 36 pounds per day (12 from Susan, 24 from Tom).
  c. Tom should be sent to pick nuts, since his opportunity cost (half a pound of coffee per pound of nuts) is lower than Susan's (2 pounds of coffee per pound of nuts). Since it would take Tom only one hour to pick four pounds of nuts, he can still pick 10 pounds of coffee in his 5 working hours that remain. Added to Susan's 24 pounds, they will have a total of 34 pounds of coffee per day.
  d. Susan should be sent to pick coffee, since her opportunity cost (half a pound of nuts per pound of coffee) is lower than Tom's (2 pounds of nuts per pound of coffee). It will take Susan 2 hours to pick 8 pounds of coffee, which means that

she can still pick 8 pounds of nuts. So they will have a total of 32 pounds per day of nuts.

e. To pick 26 pounds of nuts per day, Tom should work full time picking nuts (24 pounds per day) and Susan should spend one hour per day picking nuts (2 pounds per day). Susan would still have 5 hours available to devote to coffee picking, so she can pick 20 pounds of coffee per day.

LO: 3
AACSB: Analytical Skills
Bloom's: Application and Analysis

10. Note: the graph for this problem is given below.
   a. The point (30 pounds of coffee per day, 12 pounds of nuts per day) can be produced by having Susan work full time picking coffee (24 pounds of coffee per day) while Tom spends 3 hours picking coffee (6 pounds of coffee) and 3 hours picking nuts (12 pounds of nuts). The point (24 pounds of coffee per day, 24 pounds of nuts per day) can be achieved if each works full time at his or her activity of comparative advantage. Both points are attainable and efficient.
   b. The points and the straight lines connecting them are shown in the diagram below. The resulting line is the production possibilities curve for the two-person economy consisting of Susan and Tom. For any given quantity of daily nut production on the horizontal axis, it shows the maximum possible amount of coffee production on the vertical axis.
   c. By specializing completely, they can produce 24 pounds of coffee per day and 24 pounds of nuts (the point at which the kink occurs in the PPC in the diagram). If they sell this output in the world market at the stated prices, they will receive a total of $96/day.
   d. With $96 per day to spend, the maximum amount of coffee they could buy is 48 pounds per day. Or they could buy 48 pounds per day of nuts. 40 pounds of nuts would cost $80, and 8 pounds of coffee would cost $16, so they would have just enough money ($96 per day) to buy this combination of goods.
   e. With the ability to buy or sell each good at $2/lb in world markets, Tom and Susan can consume as many as 48 pounds per day of coffee (point E in the diagram below), or as many as 48 pounds of nuts (point F). We have also seen that point G (40 pounds of coffee per day, 8 pounds of nuts per day) is an attainable point, and they can still attain point C (24 pounds of each good), even without trading in world markets. Their new menu of consumption possibilities is shown by the straight line EF in the diagram. This menu is called their "consumption possibilities curve." Note how the ability to trade in world markets expands their consumption possibilities relative to what they were before.

LO: 3
AACSB: Analytical Skills
Bloom's: Application and Analysis

Coffee
(lb/day)

36 ■ 9a
34 ■ 9c
30 ■ 10a
26 ■ 9e
24 ■ 10a

Production Possibilities Curve
for Susan & Tom

8 ■ 9d
   ■ 9b **Nuts**
          (lb/day)

0   4   12   20 24   32 36