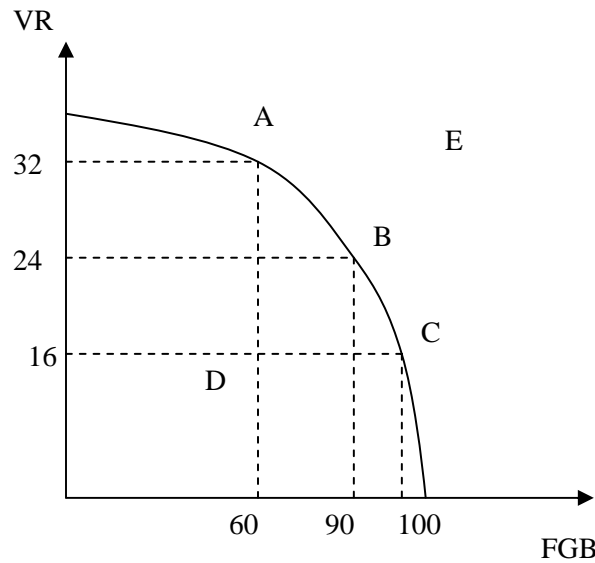


Homework #1 Answers

1. Hipsterland produces two goods, vinyl records and fixed gear bikes. The graph below displays the country's PPF. Answer the following questions.



- a. Which point displayed on the PPF is not a feasible production point for Hipsterland?

Point E

- b. If Hipsterland is currently producing at combination A, what is the opportunity cost of producing 30 more fixed gear bikes?

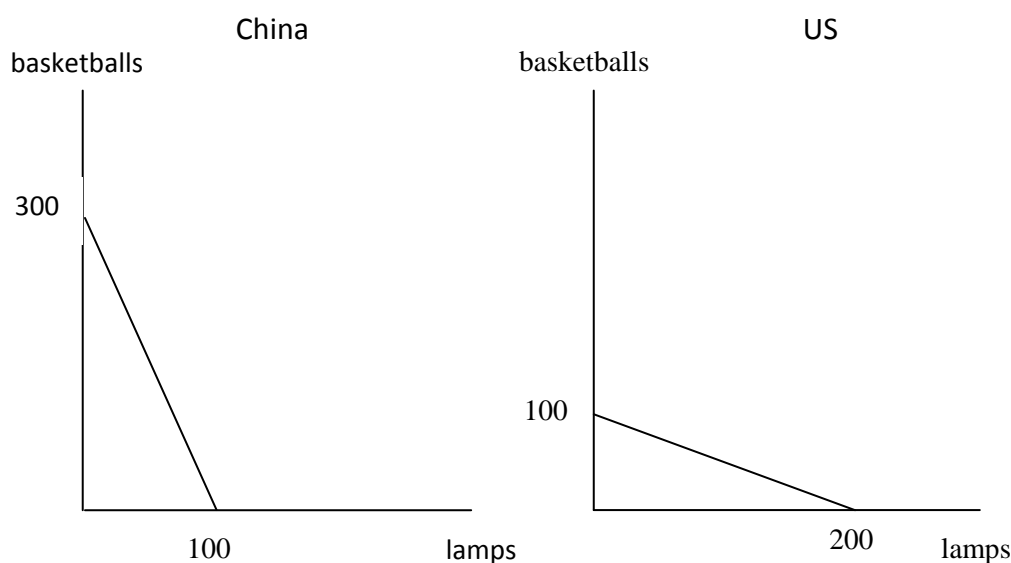
8 vinyl records

- c. What is happening to the opportunity cost of producing more fixed gear bikes if we move from point A to point C. Explain your answer.

The opportunity cost is increasing as we move along the PPF. This is caused primarily because of specialization of resources.

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2. Suppose that the US and China each produce only two goods: basketballs and lamps. Furthermore, assume that the countries have linear production possibility frontiers. When the US uses all of its resources to produce basketballs, it produces 100. When it produces only lamps it can produce 200 lamps. When China allocates all of its resources to produce basketballs, it can produce 300 basketballs. When China produces only lamps it can produce 100.
- a. What is the opportunity cost for each country of producing basketballs? What is the opportunity cost for each country of producing lamps?



For China:

OC of lamps = $(300/100) = 3$ basketballs

OC of basketballs = $(100/300) = 1/3$ lamps

For the US:

OC of lamps = $(100/200) = 1/2$ basketballs

OC of basketballs = $(200/100) = 2$ lamps

- b. Which country has the absolute advantage in producing basketballs? Which has the absolute advantage in producing lamps?

China has the absolute advantage in producing basketballs.

The US has the absolute advantage in producing lamps.

- c. Which country has the comparative advantage in producing basketballs? Which has the comparative advantage in producing lamps?

China has the comparative advantage in producing basketballs, with an OC of $1/3$ lamps.

The US has the comparative advantage in producing lamps, with an OC of 1/2 basketballs.

- d. Suppose that China and the US trade. Which country should specialize in producing lamps? Which country should specialize in producing basketballs?

The US should specialize in producing lamps, because they have the lower opportunity cost at producing lamps. China should specialize in producing basketballs, because they have a lower opportunity cost of producing basketballs.

- e. What are the acceptable prices for lamps (in terms of basketballs)? What are the acceptable prices for basketballs (in terms of lamps)?

The price of a lamp must fall between 1/2 basketballs and 3 basketballs. This is because China will accept no less than 1/2 basketball to sell a lamp and the US will be willing to pay no more than 3 basketballs to purchase a lamp.

The price of a basketball must fall between 1/3 lamps and 2 lamps. China will pay no more than two lamps for a basketball. The US will accept no less than 2 lamps as payment for a basketball.

- f. The US and China are engaged in trade and producing on their respective PPFs. Suppose that China is producing exactly 150 basketballs. How many lamps must they be producing? How many of each good must the US be producing?

If China is producing exactly 150 basketballs, then it must be true that they are producing 50 lamps. This can be seen by graphing China's PPF.

If China is producing both basketballs and lamps, then it must be true that the US is producing only lamps. So, the US must be producing 200 lamps and no basketballs.

If the US was producing any less than 200 lamps, then it would be possible to make one or both countries better off by having the US produce more lamps (to trade to China) and China produce more basketballs (to trade to the US).

3. Suppose that you are considering opening a cane sugar refinery, where you will purchase raw cane sugar and produce refined cane sugar. Before deciding to open a factory, you want to consider a number of scenarios and how they could hurt or help your profitability. For each of the following scenarios, draw the effect on the market for refined cane sugar and figure out the overall effect on the price and quantity of refined sugar you will be able to sell in equilibrium (i.e. increase, decrease, or indeterminate).
- a. The overall income of refined sugar consumers doubles.

This is a change in income. The demand for refined cane sugar will shift to the right. The equilibrium price and quantity will increase.

- b. Medical studies prove that high fructose corn syrup is actually extremely healthy.

This is a change in consumer tastes and preferences. Consumers will switch to high fructose corn syrup and the demand curve will shift to the left. The equilibrium price and quantity will fall.

- c. The government decides to no longer protect the domestic cane sugar farmers and removes all import tariffs on raw cane sugar from abroad (leading to a fall in the price of raw cane sugar).

This is a fall in the price of an input. The supply curve will shift to the right. This will lead to an increase in equilibrium quantity and a fall in equilibrium price.

- d. Mexican Coke and Dublin Dr. Pepper become the most popular drink in the US (both of which use cane sugar).

\This is a change in consumer tastes/preferences. There will be a shift of the demand curve to the right. The equilibrium price and quantity will increase.

- e. Consumers hear that there will be a drought next year and that refined cane sugar output will be low. (Assume that suppliers do not change their behavior in anticipation of the drought.)

This corresponds to a change in the consumers' expectations. It leads to the shift of the demand curve to the right in anticipation of higher prices in the future. As a result, equilibrium price and quantity will increase.

- f. Farmers increase production of raw cane sugar this year in anticipation of a drought next year. (Assume that consumers' behavior does not change.)

This corresponds to a change in the price of an input. The increase in supply of raw cane sugar causes the price of the input to fall. As a result, the supply curve will shift to the right, causing the equilibrium price to fall and the quantity to increase.

- g. Farmers increase production of raw cane sugar and consumers increase consumption of refined cane sugar, both in anticipation of a coming drought.

The combination of the effects of e. and f. lead to an overall increase in the equilibrium quantity of refined cane sugar, but the overall effect on the price cannot be determined (is indeterminate).