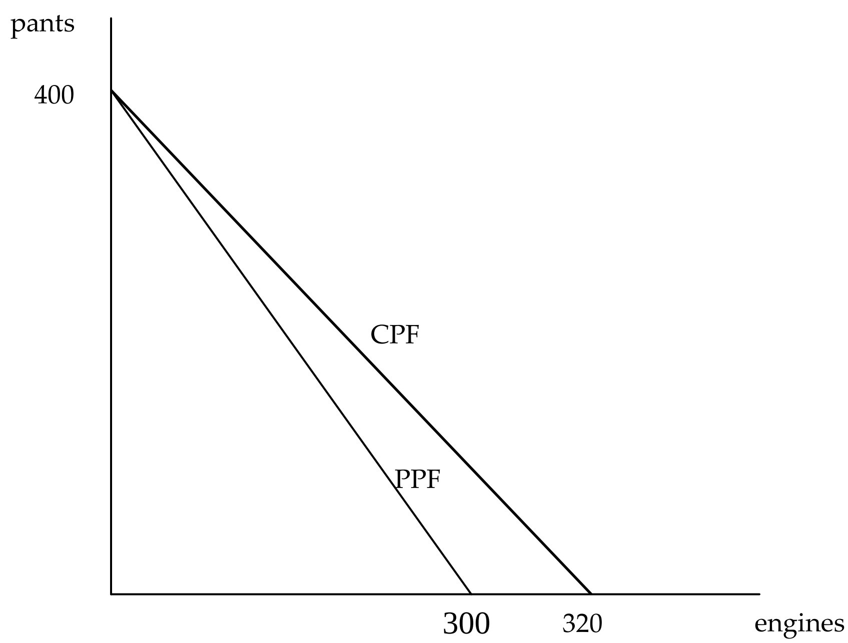
Practice Problems: Trade [Key]

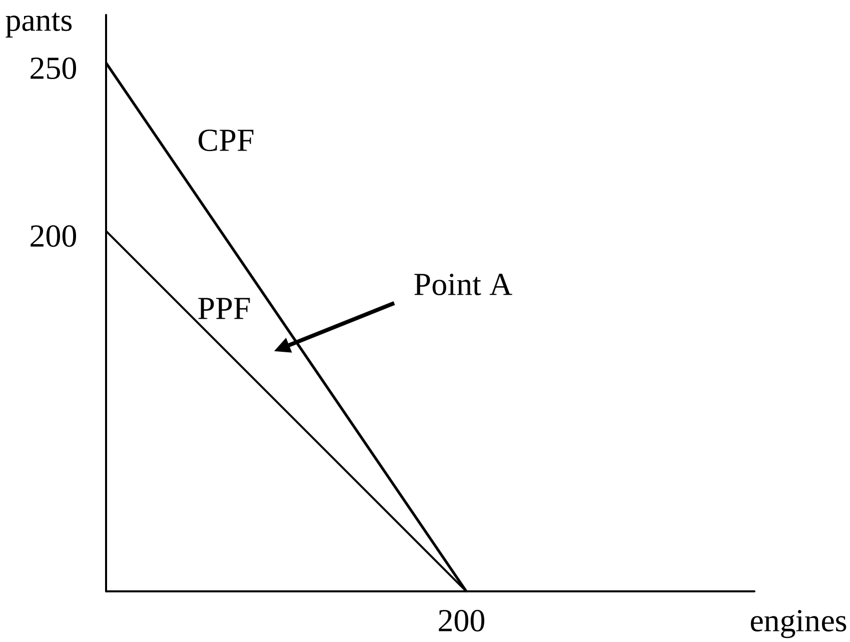
1. Workers in the United States can produce a small engine in 20 minutes, while workers in China can produce the same engine in 30 minutes. Workers in the United States can produce a pair of pants in 15 minutes, while workers in China can produce the same pair of pants in 30 minutes. Assume the U.S. has 100 available hours of work and China has 100 available hours of work.

   a. Graph the production possibilities frontier for the U.S., with engines on the x-axis. Label the values of the x-intercept and y-intercept.



U.S. Production and Consumption Possibilities Frontier

b. Graph the production possibilities frontier for the China, with engines on the x-axis. . Label the values of the x-intercept and y-intercept.



China Production and Consumption Possibilities Frontiers

c. There is no reason for the U.S. to trade with China since the U.S. can make both pants and engines in less time. True or False? Why?

False. The U.S. may have absolute advantage in producing pants and engines, but trade is based on comparative advantage. In order to determine comparative advantage we must calculate the opportunity cost of producing the goods in each country.

d. Suppose China and the U.S. do not trade. What are the wages in China and the U.S. in terms of the price of pants?

Pant producing firms in the U.S. set $p_p^U 4 = w^U$ in order to maximize profits. (This is the first order condition of the firm's maximization problem.) Since we want wages in terms of the price of pants, we divide the equation through by the price of pants to see that wages in the U.S. are 4.

Pant producing firms in China set $p_p^C 2 = w^C$ in order to maximize profits. Thus, wages in China are 2.

e. If the U.S. opens to trade with China, China will produce everything and the cheap Chinese labor will drive all of the jobs out of the U.S. The U.S. will have no money to buy engines and pants. True or False? Why?

False. Trade determines the composition of jobs, not the number of jobs. China will produce the good it has the comparative advantage in and the U.S. will produce the goods it has the comparative advantage in. One country can not have the comparative advantage in both.

f. What is the price of engines (relative to pants) in China and the U.S. when there is no trade?

U.S. engine producing firms set $p_e^U 3 = w^U$. Given our solution from part d., the price of engines is 1.33.

Chinese engine producing firms set $p_e^C 2 = w^C$. Given our solution from part d., the price of engines is 1.

g. If the world price of engines (in terms of pants) was 1.25, would there be trade? If so, who would export what?

When the price of engines is 1.25, the U.S. would export pants for engines, since the trade off (1.25 pants per engine) is smaller than it would be if the U.S. produced engines themselves. Similarly, China would export engines for pants.

h. Let the price of engines be 1.25. Show on your graphs from part a. and part b. what the consumption possibilities frontiers are for China and the United States. Label the intercepts of the consumption possibilities frontier. Be neat!

i. Argue that trading at the price 1.25 has made both countries better off. You may find it helpful to use your graphs in part a. and b.

As can be seen in the figures from part a. and part b., trade increases the amount of **both** goods that a country can consume. For example, at point A in the figure above, China is able to consume more of both engines and pants. Assuming that people like pants and engines (Who doesn't?) the countries are better off.

2. You are working for Illy, a firm that produces and exports tasty coffee to the United States. Your boss tells you that domestic coffee roasters in the U.S. have filed a dumping complaint against the company, but he has no idea what that means.

   a. Explain what two things the U.S. coffee roasters must show in order to find Illy "guilty" of dumping and what happens if Illy is found guilty.

      Coffee roasters in the U.S. must show that Illy has been pricing unfairly – in particular that it is selling coffee in the U.S. at lower price than it sells coffee in Italy. The roasters must also show that they have sustained injury.

   b. Your boss had never heard of dumping before, but has been hearing about it a lot lately as the number of antidumping cases has increased. Explain to your boss why antidumping cases have increased.

      Antidumping cases have risen in popularity as WTO rules have eliminated many of the other forms of trade barriers.

3. The U.S. has a long running tradition of protecting sugar producers, going back to 1789 when then Treasury Secretary Alexander Hamilton helped pass a tariff on sugar imports. Currently the U.S. restricts the amount of imports of sugar into the U.S. through a system of quotas and guarantees sugar prices to U.S. producers that are higher than world sugar prices.

   a. Who benefits from these policies?

      People who produce sugar or sugar substitutes benefit from these policies. Sugar cane and beet farmers benefit from the high costs of sugar, as do corn growers, who produce corn syrup, a cheaper alternative to sugar. Politicians from the states in which people grow sugar or corn are also beneficiaries of these policies as they tend to keep them elected. Lobbyists also benefit.

   b. Who is hurt by these policies?

      Anyone who consumes a product that contains sugar is hurt as are producers who use sugar as an input to production. People who use and eat corn are also affected, as the increased demand for corn has increased the price of corn, too.

   c. Economists believe that the costs of the sugar policies outweigh the benefits of the policies, yet these policies remain. Why?

      Unfortunately, economists do not make policy. Policy is written and enacted by elected officials who have strong incentives to get reelected. Sugar producers are a small group, so the benefits of the policies are spread over a small number of people. A small group of people with a significant benefit to be gained are more easily mobilized to support lobbying of a policy. Sugar users are a large, diverse group who are individually affected in a relatively small way. This makes organization to overturn these policies difficult.