## Problems

29.

France and Tunisia both have Mediterranean climates that are excellent for producing/harvesting green beans and tomatoes. In France it takes two hours for each worker to harvest green beans and two hours to harvest a tomato. Tunisian workers need only one hour to harvest the tomatoes but four hours to harvest green beans. Assume there are only two workers, one in each country, and each works 40 hours a week.

1. Draw a production possibilities frontier for each country. *Hint*: Remember the production possibility frontier is the maximum that all workers can produce at a unit of time which, in this problem, is a week.
2. Identify which country has the absolute advantage in green beans and which country has the absolute advantage in tomatoes.
3. Identify which country has the comparative advantage.
4. How much would France have to give up in terms of tomatoes to gain from trade? How much would it have to give up in terms of green beans?

30.

In Japan, one worker can make 5 tons of rubber or 80 radios. In Malaysia, one worker can make 10 tons of rubber or 40 radios.

1. Who has the absolute advantage in the production of rubber or radios? How can you tell?
2. Calculate the opportunity cost of producing 80 additional radios in Japan and in Malaysia. (Your calculation may involve fractions, which is fine.) Which country has a comparative advantage in the production of radios?
3. Calculate the opportunity cost of producing 10 additional tons of rubber in Japan and in Malaysia. Which country has a comparative advantage in producing rubber?
4. In this example, does each country have an absolute advantage and a comparative advantage in the same good?
5. In what product should Japan specialize? In what product should Malaysia specialize?

31.

Review the numbers for Canada and Venezuela from [Table 19.12](http://openstax.org/books/principles-microeconomics-3e/pages/19-2-what-happens-when-a-country-has-an-absolute-advantage-in-all-goods#Table_33_13) which describes how many barrels of oil and tons of lumber the workers can produce. Use these numbers to answer the rest of this question.

1. Draw a production possibilities frontier for each country. Assume there are 100 workers in each country. Canadians and Venezuelans desire both oil and lumber. Canadians want at least 2,000 tons of lumber. Mark a point on their production possibilities where they can get at least 3,000 tons.
2. Assume that the Canadians specialize completely because they figured out they have a comparative advantage in lumber. They are willing to give up 1,000 tons of lumber. How much oil should they ask for in return for this lumber to be as well off as they were with no trade? How much should they ask for if they want to gain from trading with Venezuela? *Note*: We can think of this “ask” as the relative price or trade price of lumber.
3. Is the Canadian “ask” you identified in (b) also beneficial for Venezuelans? Use the production possibilities frontier graph for Venezuela to show that Venezuelans can gain from trade.

32.

In [Exercise 19.31](#fs-idm129993648), is there an “ask” where Venezuelans may say “no thank you” to trading with Canada?

33.

From earlier chapters you will recall that technological change shifts the average cost curves. Draw a graph showing how technological change could influence intra-industry trade.

34.

Consider two countries: South Korea and Taiwan. Taiwan can produce one million mobile phones per day at the cost of $10 per phone and South Korea can produce 50 million mobile phones at $5 per phone. Assume these phones are the same type and quality and there is only one price. What is the minimum price at which both countries will engage in trade?

35.

If trade increases world GDP by 1% per year, what is the global impact of this increase over 10 years? How does this increase compare to the annual GDP of a country like Sri Lanka? Discuss. *Hint*: To answer this question, here are steps you may want to consider. Go to the World Development Indicators (online) published by the World Bank. Find the current level of World GDP in constant international dollars. Also, find the GDP of Sri Lanka in constant international dollars. Once you have these two numbers, compute the amount the additional increase in global incomes due to trade and compare that number to Sri Lanka’s GDP.