

Assignment #8,

Study question for quiz/exam in class on 3/27. The questions carry on from one to the next so you need to work through them in order.

(You do not need to turn in the answers to these questions.)

1. In the United States it takes 4 hours of labor to produce a ton of steel and 8 hours to produce a computer. Imagine these are the only two goods and labor is all that is required to produce them. The United States has 100 million workers available, each working for 8 hours.
 - a. How many computers can be produced in the United States?
 - b. Draw the U.S. production possibility frontier.
 - c. According to Ricardo's Labor Theory of Value, how many tons of steel should you get in exchange for a computer?
2. In China it takes 8 hours to produce a ton of steel and 64 hours to produce a computer. Compare production in China to production in the United States:
 - a. Which country has an absolute advantage in producing steel?
 - b. Which has an absolute advantage in computers?
 - c. Which has a comparative advantage in computers?
 - d. Which has a comparative advantage in steel?
 - e. What does the Labor theory of value imply for China on its own?
3. Now consider trade between the United States and China. Suppose that on the world market, one computer exchanges for 4 tons of steel:
 - a. How many hours would it take for a steel worker in China to produce enough steel to exchange for one computer?
 - b. How many hours would it take for a computer worker in the United States to produce enough computers to exchange for ten tons of steel?
 - c. Explain why China will specialize in producing steel and the United States in producing computers?
 - d. Draw a line showing all the combinations of steel and computers that the United States can obtain by producing only computers and trading some of them for steel from China.
 - e. Show that the United States gains by trading with China (hint: compare your answer to 3.d. with your answer to 1.b above).
 - f. Show that China gains by trading with the United States.
4. Since workers in the United States are more productive than workers in China at producing either good, you might wonder why everything isn't produced in the United States. The answer is that a U.S. worker is paid more per hour than is a worker in China. Suppose the wage in the United States is 4 times the wage in China. (With the wage so much higher in the United States, now you might wonder why everything isn't produced in China.) Here's how it works:
 - a. Show that it is cheaper to produce a ton of steel in China.
 - b. Show that it is cheaper to produce a computer in the United States.
 - c. Show that it costs the same to produce a computer in the United States as to produce 4 tons of steel in China. Now, explain why a computer exchanges for 4 tons of steel on the world market.