1.- (50 Points; although the numbers are different, this exercise is the same as exercise 17-1 of the section Check-Your-Understanding, on page 414 of the textbook.)
In the U.S., the opportunity cost of 1 ton of corn is 40 bicycles. In China, the opportunity cost of 1 bicycle is 0.02 ton of corn.

a) Determine the pattern of comparative advantage (i.e. which country has a comparative advantage in what good.) Make clear to show that you understand the meaning of comparative advantage.

b) In autarky, the U.S. can produce 100,000 bicycles if no corn is produced, and China can produce 3,000 tones of corn if no bicycles are produced. Draw each country’s production possibility frontier assuming constant opportunity cost, with tons of corn on the vertical axis.

c) With trade, each country specializes its production. The U.S. consumes 1,000 tons of corn and 200,000 bicycles; China consumes 3000 tons of corn and 100,000 bicycles. Indicate the production and consumption points on your diagrams, and use them to explain the gains from trade.

2.- (50 points) Draw the demand and supply of grapes in a given country.

a) Determine the autarky price, PA; that is the price of grapes if the country does not trade with the rest of the world.

b) Assume that the world price of grapes, PW, is higher than PA. Draw the line representing PW.

c) In the graph, determine the quantity consumed and the quantity produced domestically when trade is allowed. Is the country importing or exporting grapes?

d) Indicate the change in the consumer surplus and the change in the producer surplus arising when the country starts trading with the rest of the world.

e) Indicate the change in total surplus (consumer plus producer) due to international trade.

3.- This is a bonus question and it is worth 15 points. The question is similar to question 1 of the Check-Your-Understanding 17-2 on page 420 of the textbook.
Due to a strike by truckers, trade in food between the U.S. and Mexico is halted. In autarky the price of Mexican potatoes is lower than that of U.S. potatoes. Using a graph, explain the effect of the strike on the following:

a) U.S. potato consumers’ surplus.

b) U.S. potato producers’ surplus.

c) U.S. total surplus.
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2.- (50 points) Draw the demand and supply of grapes in a given country.
   f) Determine the autarky price, PA; that is the price of grapes if the country does not trade with the rest of the world.
   g) Assume that the world price of grapes, PW, is lower than PA. Draw the line representing PW.
   h) In the graph, determine the quantity consumed and the quantity produced domestically when trade is allowed. Is the country importing or exporting grapes?
   i) Indicate the change in the consumer surplus and the change in the producer surplus arising when the country starts trading with the rest of the world.
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   d) U.S. potato consumers’ surplus.
   e) U.S. potato producers’ surplus.
   f) U.S. total surplus.