

Problem Set #1

Name:

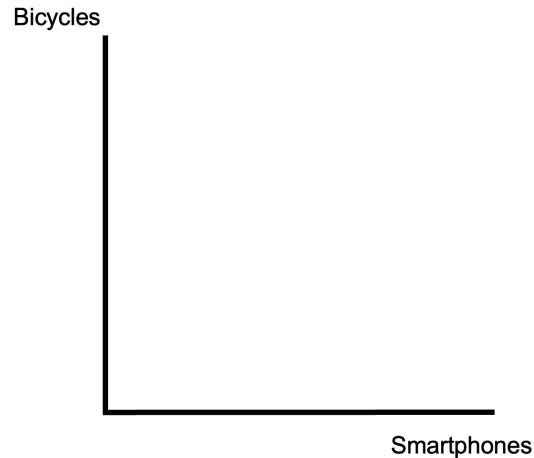
Due: Sep 16 in-class

Note: Show all your work for full credit

Question 1

Suppose we live in an economy that produces only smartphones and bicycles.

- a. Draw a bowed-outward hypothetical PPF for this economy (no need to add numbers). Label a point that is efficient, a point that is inefficient, and a point that is infeasible.



- b. Explain, intuitively, why PPFs are typically bowed outward, i.e., why the opportunity cost of smartphones rises as the economy produces more of them.

Question 2

Suppose Maria can write 10 pages or solve 30 math problems per hour. Carlos can write 8 pages or solve 16 math problems per hour.

- a. Who has the absolute advantage in each activity?
- b. Calculate opportunity costs for each person.

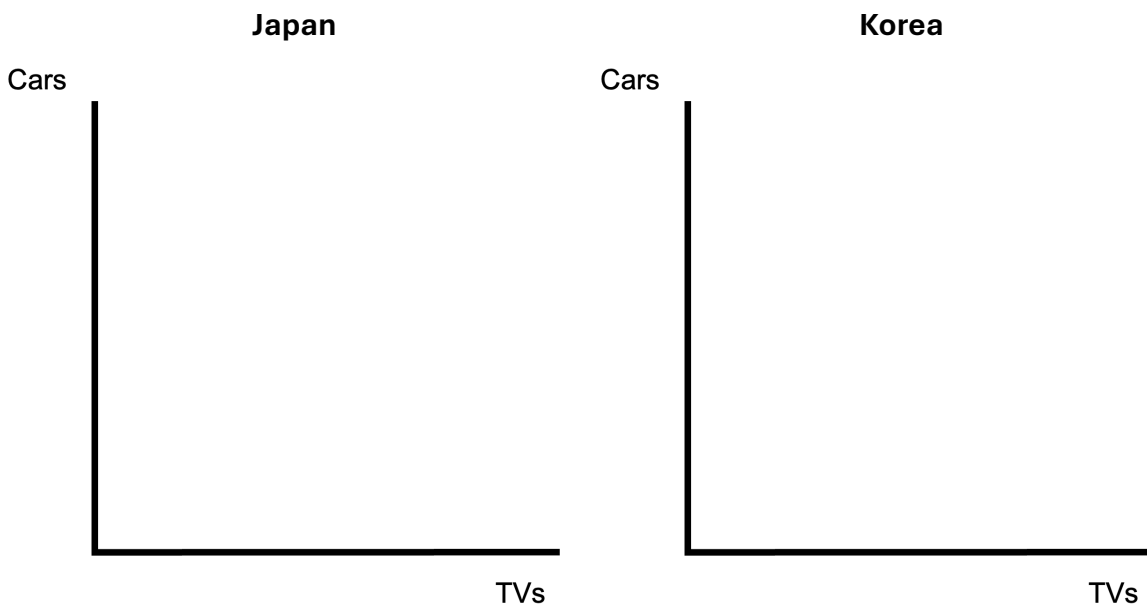
c. Who has the comparative advantage in each activity?

d. Suggest a beneficial trade agreement.

Question 3

Japan can produce 100 cars or 200 TVs per day. Korea can produce 80 cars or 240 TVs per day.

a. Graph the PPFs, assuming a constant opportunity cost of production (i.e., straight PPF)



b. Which country has the comparative advantage in each industry?

- c. If the two countries specialize (only produce one good) and then trade, what would be the range of acceptable trading prices?

- d. Give an example of a trade that benefits both Japan and Korea. Plot the new consumption bundles after this trade on the PPFs above.

Question 4

For each scenario in the market for iced coffee, state whether it shifts demand, shifts supply, or causes a movement along one of the curves, and in which direction:

- a. Student incomes rise

- b. The price of energy drinks falls

- c. A heat wave hits campus

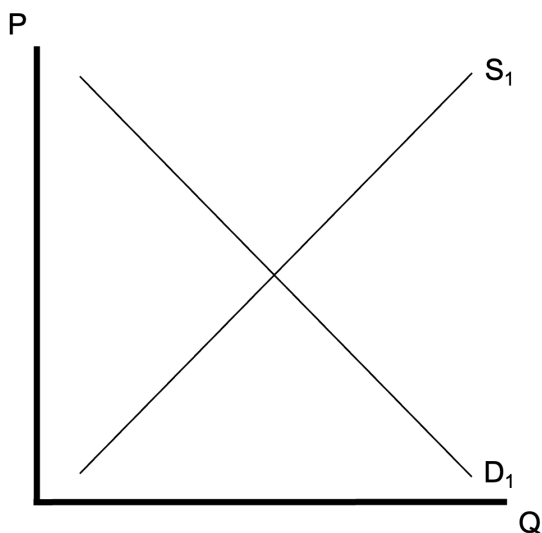
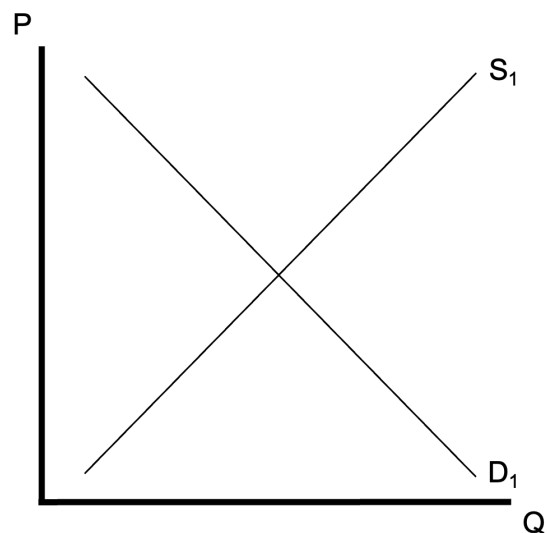
- d. Milk prices rise

- e. The price of iced coffee itself falls.

Question 5

Suppose coffee and donuts are complements. If there is a bad harvest in Colombia that destroys much of the coffee bean crop, what happens to:

- Supply and/or demand for coffee?
- Equilibrium price and quantity of coffee?
- Supply and/or demand for donuts?
- Equilibrium price and quantity of donuts?
- Illustrate what happens on the supply and demand graphs below. Label the original equilibrium price and quantities, and the new prices and quantities.

Coffee**Donuts**

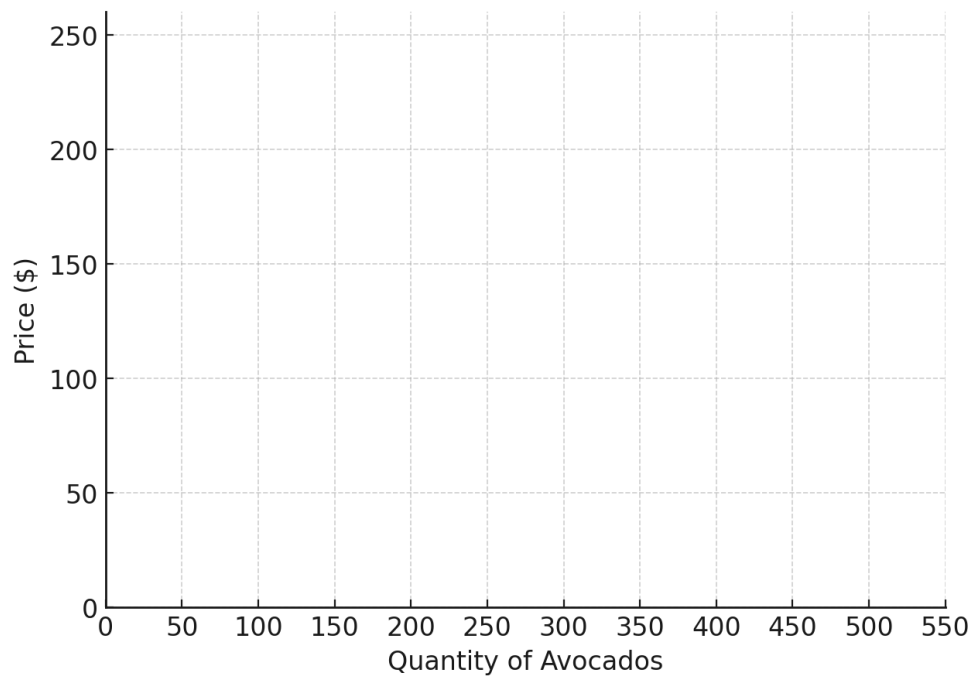
Question 6

Suppose supply and demand for avocados can be explained by the following formulas:

$$Q_D = 500 - 2P$$

$$Q_S = 100 + 2P$$

- a. Using the equations, derive the equilibrium price and quantity.
- b. On the graph below, draw both the supply and demand curves and identify the equilibrium price and quantity.



- c. Suppose a new technology increases avocado supply so the new supply curve is

$$Q_s = 300 + 2P$$

Algebraically derive the new equilibrium price and quantity and draw on the graph above.