

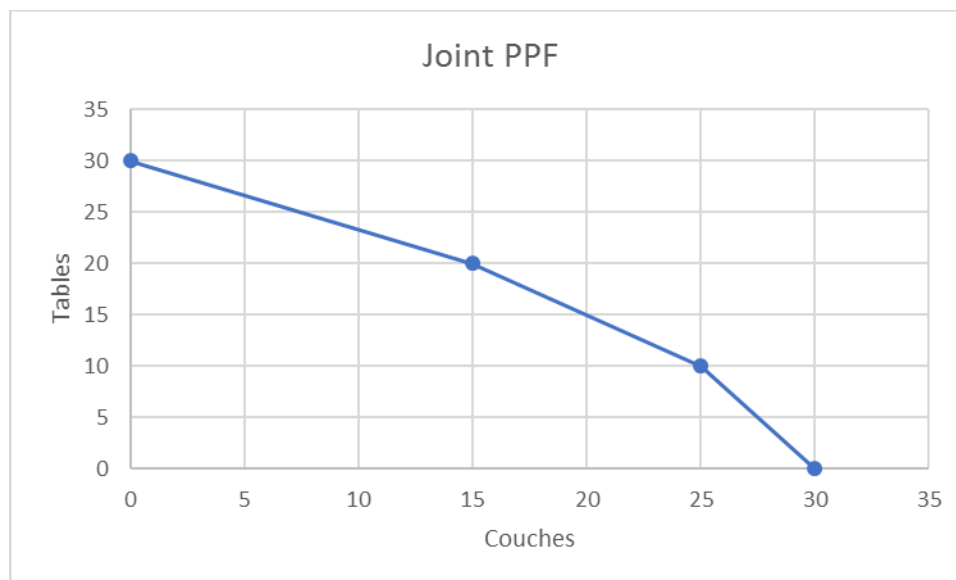
**Economics 102**  
**Fall 2017**  
**Homework #2**  
**Due 10/10/17**

**Directions:** The homework will be collected in a box **before** the lecture. Please place your name, TA name and section number on top of the homework (legibly). Make sure you write your name as it appears on your ID so that you can receive the correct grade. Please remember the section number for the section **you are registered**, because you will need that number when you submit exams and homework. Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

Please remember to

- Staple your homework before submitting it.
- Do work that is at a professional level: you are creating your “brand” when you submit this homework!
- Do not submit messy, illegible, sloppy work.
- Show your work to get full credit.

1. You are given the following joint PPF for 3 individuals: Sarah, John, and Michael.



- Write the equation for each line segment in the joint PPF, including the ranges of tables that each line segment covers.
- Suppose that Sarah has the lowest opportunity cost of producing couches, and Michael has the highest opportunity cost of producing couches. Draw the 3 individual PPFs for Sarah, John, and Michael.
- Who has the absolute advantage in producing couches?

d. Who has the comparative advantage in producing couches?

e. Will Sarah be willing to trade 1 couch to John for  $\frac{1}{2}$  table? Why or why not?

2. Suppose there is a market where Lois, Steven, and Yunhan are the only consumers, and the only product being sold is bananas. Lois wants to buy 3 bunches of bananas when the price is \$1.00/bunch, but only wants to buy 1 bunch when the price is \$2.00/bunch. Steven wants to buy 5 bunches when the price is \$1.00/bunch, and 2 bunches when the price is \$2.00/bunch. Yunhan wants to buy 8 bunches when the price is \$1.00/bunch, and 4 bunches when the price is \$2.00/bunch. Assume everyone has linear demand curves.

a. Write the equation for Lois's demand curve, in both P-intercept form and in Q-intercept form.

b. Write the equation for Steven's demand curve, in both P-intercept form and in Q-intercept form.

c. Write the equation for Yunhan's demand curve, in both P-intercept form and in Q-intercept form.

d. Find the equation of each line segment of the market demand curve and provide the ranges for each segment of the market demand curve.

e. Draw the market demand curve, and label any kinks in the graph.

3. Suppose in the market for bananas, there are two suppliers: Bananas Unlimited and Best Bananas. Bananas Unlimited is willing to sell 3 bunches of bananas when the price is \$1/bunch, and 10 bunches when the price is \$2/bunch. Best Bananas is willing to sell 13 bunches when the price is \$1/bunch and 26 bunches when the price is \$2/bunch.

a. Find the equation for Bananas Unlimited's supply curve, in both P-intercept and Q-intercept form.

b. Find the equation for Best Bananas's supply curve, in both P-intercept and Q-intercept form.

c. Find the equation for each line segment of the market supply curve.

d. Draw the market supply curve, and label any kinks in the graph.

4. Using the information provided in questions 2 and 3,

a. Find the equilibrium supply and demand in the market for bananas.

b. How many bunches bananas will Lois consume? How many with Steven consume? How many will Yunhan consume?

c. How many bunches of bananas will Bananas Unlimited supply? How many will Best Bananas supply?

d. What is the value of the producer surplus in this market? Warning: this is a complicated calculation and you may find it easier to keep all your work in fractions, particularly if you opt to not use a calculator. We, of course, did not use a calculator on this problem-so the answer key will use fractions.

e. Suppose that the area where Bananas Unlimited sources their bananas from experiences a natural disaster, and Bananas Unlimited is restricted to supplying less bananas than before at each price. Given this information and holding everything else constant, does the equilibrium quantity increase or decrease? Does the equilibrium price increase or decrease?

5. Suppose in the closed economy of Cedarville, the market for clocks is described by the following equations:

$$\text{Domestic Demand: } P = 60 - 2Q$$

$$\text{Domestic Supply: } P = 10 + 2Q$$

a. What is the market equilibrium if this economy is closed to trade?

b. What are the consumer surplus and producer surplus when this economy is closed to trade? What is the total surplus when this economy is closed to trade?

c. Now, this economy is opened to trade, and the world price of clocks is \$25. What happens to consumer, producer, and total surplus in Cedarville's clock market?

d. Now, suppose the government implements a tariff of \$5/clock. What is the new consumer, producer, and total surplus in Cedarville's clock market? How much revenue will the tariff raise for the government of Cedarville? What is the deadweight loss due to the imposition of this tariff in Cedarville's market for clocks?

e. Explain how trade benefits some and hurts others, using numbers from this problem. Explain the economic effects of the tariff.

6. Suppose the small, closed economy of Coldsville's market for winter coats is described by the following domestic demand and domestic supply equations:

$$\text{Domestic Demand: } Q = 200 - 2P$$

$$\text{Domestic Supply: } Q = (1/2)P$$

a. Find the market equilibrium when this market is closed to trade.

b. Find the consumer, producer, and total surplus when this market is closed to trade.

c. Now, this economy is opened to trade, and the world price of winter coats is \$20. What happens to consumer, producer, and total surplus when this market opens to trade?

d. Suppose the government of Coldsville implements an import quota of 100 coats. How does the new consumer surplus compare to the consumer surplus when the economy was closed to trade? How does the new consumer surplus compare to the consumer surplus when the economy was open to unrestricted trade?

e. Suppose the government of Coldsville implements an import quota of 100 coats. How does the new producer surplus compare to the producer surplus when the economy was closed to trade? How does the new producer surplus compare to the producer surplus when the economy was open to unrestricted trade?

f. What is the value of the license holder revenue when the government of Coldsville implements this import quota?

g. What is the value of the deadweight loss when the government of Coldsville implements this import quota?