
Prelim 1 Answers Econ 1110 Wissink Spring 2020

1 C.

Positive (aka descriptive) economics is an approach to economics that seeks to understand behavior and the operation of systems without making judgments. Normative economics is an approach that analyzes outcomes of economic systems and behavior and evaluates them with some judgmental or ethical component as to whether they are good/just or bad/unjust. A, B, D, and E all state objective facts; only C provides a judgmental or ethical component.

2 D.

Mike can both make more lattes and serve more customers in an hour so he has an absolute advantage in both. Louis's MOC of serving one customer is 0.5 lattes; Mike's MOC of serving one customer is 0.6 lattes. Thus Louis has a comparative advantage in working the register and Mike has a comparative advantage in making lattes. If Mike makes lattes and Louis works the register they can together make 30 lattes and help 30 customers. In order to make 40 lattes, Mike has to make lattes the whole time (30 lattes), and Louis has to commit $\frac{2}{3}$ of his time to making lattes (10 lattes). That leaves on $\frac{1}{3}$ hour for Louis to help customers, which is only 10 customers. Thus D is false.

3 A.

The MOC of making lattes (in terms of helping customers foregone) is as follows:

Mike = $\frac{5}{3}$ customers = 1.66 customers

Louis = 2 customers

Anne = 1 customer

Stephanie = 1.5 customers

To make 75 lattes, Anne will make 40, Stephanie will make 20, and Mike will make the remaining 15, which take $\frac{1}{2}$ of an hour. To help 55 customers, Louis will help 30 and Mike will help $\frac{1}{2} * 50 = 25$. Thus A is false since it takes all of their time to help 55 customers and make 75 lattes.

4 A.

The marginal opportunity cost of making a doll is 1 robot for Amy and 0.5 robot for Bert. Thus, Amy has a comparative advantage in making robots and Bert has a comparative advantage in making dolls. A is the only correct statement. Note that since we are not given how much time Amy and Bert work and if they work different amounts of time or the same amount of time, we cannot really say anything about absolute advantage.

5 C.

For China: MOC of wheat is $\frac{1}{2}$ yd. MOC of fabric is 2 lbs.

For South Korea: MOC of wheat is 3 yd. MOC of fabric is $\frac{1}{3}$ lbs.

So A has a price too high for China. And B has a price too low for South Korea. D has a price too high for South Korea. E is just wrong, since they have different MOCs. So the answer is C. Fabric can trade in the follow range of prices: $\frac{1}{3}$ a pound of wheat to 2 pounds of wheat.

6 B.

A change in the own price is a movement along – not a shift.

7 E.

The equation is the demand function for PlayStation consoles. Therefore, if Variable M is the price of PlayStation consoles, the coefficient is expected to be negative. If Variable M is the price of a complement to PlayStation consoles (like PlayStation game CDs), the coefficient is expected to be negative as well. If Variable N is expected to be the income of consumers, then its coefficient is expected

to be positive, as PlayStation consoles are normal goods. If Variable L is the price of a substitute to PlayStation consoles (like Xbox or Nintendo Switch) then its coefficient is expected to be positive. Therefore, E is the correct answer.

8 **A.**

If the supply for strawberries in the market decreases, the equilibrium price is expected to increase. However, the final equilibrium price is lower than the initial price. This could happen if the demand for strawberries simultaneously decreased more than supply decreased. Therefore, A is the correct statement. None of the others would explain why the final price ended up lower than the original.

9 **E.**

Drawing the demand and supply changes (a rightward shift in supply and a leftward shift in demand), we see that the price must decrease while quantity could increase, decrease, or stay the same. Accordingly, total expenditures could increase, decrease, or remain the same.

10 **C.**

Consumers' surplus is defined as the sum of gains from trade to each consumer. Each consumer's gains from trade are defined as his/her willingness to pay (WTP) – market price (if WTP is greater or equal to the market price). Therefore, consumer surplus is: $(16-10) + (12-10) + (14-10) + (11-10) + (10-10) = 6+2+4+1+0 = \13 .

11 **E.**

The price floor is binding so the new price will be \$5/mile with equilibrium quantity given by the demand curve at 400 miles. Thus statements 3 and 5 are correct.

12 **C.**

The supply curve will become vertical at the quota of $Q = 400$ and so supply will now intersect demand at $P = \$5$. There is no surplus. Gains from trade actually fall.

13 **C.**

Note that $P^* = 625$ so a binding price ceiling would have to be set below that. A binding price floor would have to set above that. Q^* is 1240 so a binding quota would have to set below that. A floor set at \$875 would result in demand constraining the quantity traded to only 540. There would be a surplus then.

14 **D.**

Market Y because after imposing the tax, the equilibrium quantity in both Market X and Z will decrease, while it will not change in Market Y.

15 **E.**

The consumer surplus in Market Z is zero. The producer surplus in Market Z is the triangle between supply curve and demand curve. The consumer surplus is larger than producer surplus in Market X. The consumer surplus in Market Y is the rectangular to the left of demand curve and above the equilibrium price. The producer surplus is the triangle above supply curve and below the equilibrium price. Social surplus = CS + PS.

16 **B.**

The original producer surplus is: $(9-3) \cdot 40 \cdot 0.5 = \120 . The new producer surplus is: $(12-3) \cdot 60 \cdot 0.5 = \270 . Therefore, the change in producer surplus is $270 - 120 = +\$150$.

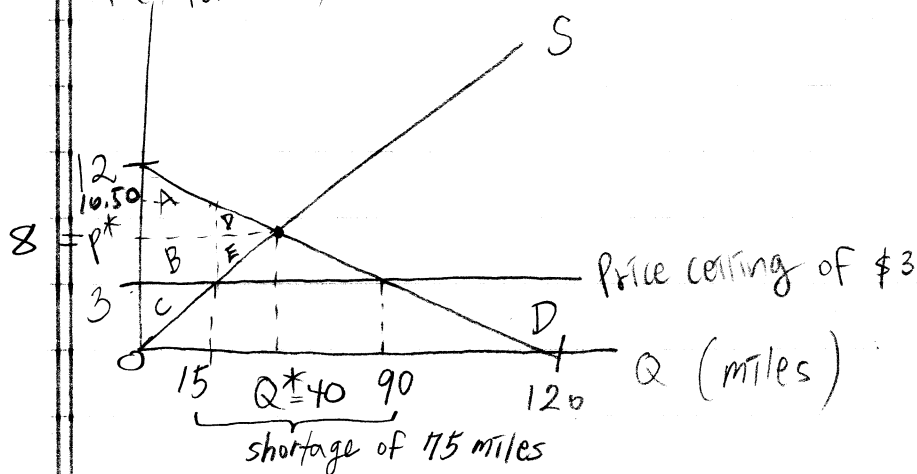
Part II: Make sure you read and do ALL parts of each question. Show as much work as possible. TRY to get started on every question. Show us something. Write legibly and remember to label all graphs and axes in diagrams.

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1. Consider the market for bus ridership in Ithaca, New York. Suppose that the supply and demand curves are given by: $Q^D = 120 - 10P$ and $Q^S = 5P$. Suppose that the market is perfectly competitive, that prices are in U.S. dollars (\$) per mile ridden on the bus, and output is measured in miles ridden on the bus. Fractional answers are allowed.
- 5 a) Carefully graph the demand and supply curves as we have done in class. Make sure to label both axes, both curves and indicate values where demand and supply intersect the vertical and horizontal axes.
- 4 b) Determine the equilibrium price and quantity in this market. Label the equilibrium price and quantity on your graph. Include their numerical values on your graph.
- 8 c) Suppose the local government (in the interest of being more "green") wants to increase the number of miles ridden on its buses. It believes that the price per mile is just too high for people to bother to use the bus. Therefore, the government enacts a price ceiling of \$3 per mile. Analyze the consequence of this policy on the market. Be as thorough as you can be with respect to the after policy price, quantity and consequences. Make sure you illustrate your analysis in your graph.
- 6 d) Does this policy create any deadweight loss, and if so, what is its value and where is this concept illustrated in your graph?
- 3 e) If you were hired as a consultant, would you endorse this policy? Offer a policy suggestion that improves on the outcome of the price ceiling. Briefly defend/explain.

Answer Space:

Re: Market for bus ridership in Ithaca, NY

a) $Q^D = 120 - 10P \Rightarrow P = 12 - \frac{1}{10}Q^D$
 $Q^S = 5P \Rightarrow P = \frac{1}{5}Q^S$
 P (\$ per mile)



b) $120 - 10p = 5p$
 $15p = 120$
 $p^* = 8 \Rightarrow$ The equilibrium price is \$8 per mile
 $Q^* = 40 \Rightarrow$ The equilibrium quantity is 40 miles.

c) At the price ^{ceiling} of \$3, $Q^S = 5 \cdot 3 = 15$ miles and
 $Q^D = 120 - 30 = 90$ miles.

Thus, there would be 75 miles of shortage of bus ridership as a result of the policy. The after-policy price would be \$3, and the after-tax quantity would be 15 miles, assuming no black market.

So, $PS \downarrow$, $CS ?$, $NSS \downarrow$. (If you assumed black mkt pricing then $CS \downarrow$, $PS \uparrow$, $NSS \downarrow$)

d) DWL as a result of the policy = initial Net Social Surplus
 - after-policy Net Social Surplus
 $= (A + B + C + D + E) - (A + B + C)$ from the graph
 $= D + E$

When $Q^D = 15$, $P = 10.50$

$$\begin{aligned}\text{Thus, } DWL &= (10.5 - 3) \cdot (40 - 15) \cdot \frac{1}{2} \\ &= \$93.75\end{aligned}$$

In the graph, the region D+E represents the DWL.

e) Bad idea! You've ended up with fewer rides not more. $Q_0^* = 40$ now $Q_N = 15$ and there are a lot of angry people bc there is now a shortage. Price might go up to as high as \$10.50 in the black market.

Maybe use a per unit subsidy instead!
or find a way to make people richer so they can afford to ride the bus... or make busses nicer....

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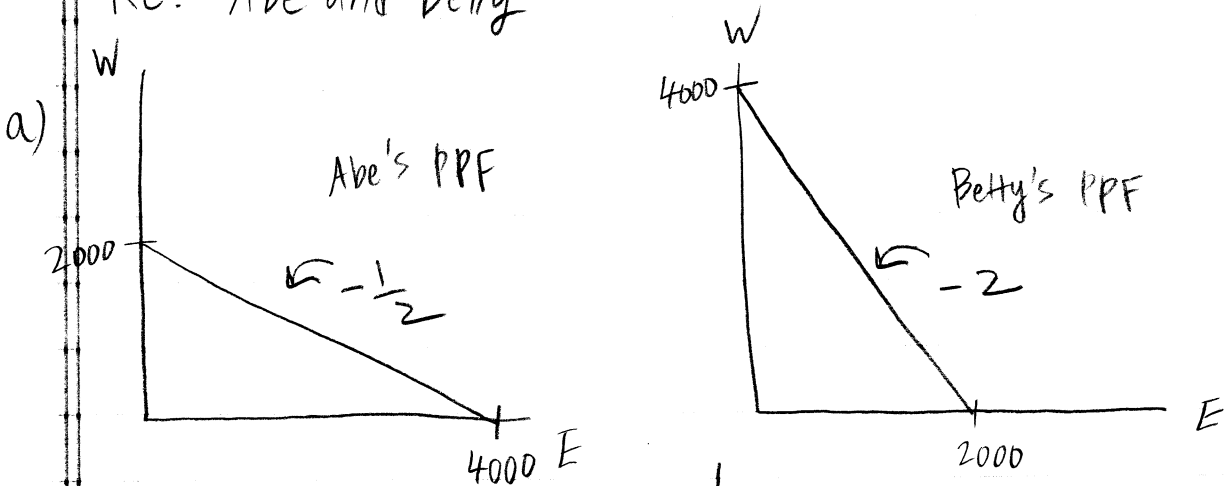
2. Suppose Abe and Betty are in a team doing a group project in a math class. There are two tasks they need to do for the project: type the written report and solve quadratic equations. The following table shows how many units of each task each person can do with each hour he or she devotes to that task. Assume that each person will devote a total of 20 hours to the project's tasks.

Person	Number of words typed in each hour	Number of equations solved in each hour
Abe	100 words	200 equations
Betty	200 words	100 equations

- 4 a) Putting equations (E) on the horizontal and words (W) on the vertical draw Abe's and Betty's production possibility frontiers (PPF). Make sure to place numerical values at each endpoint and at any kink points.
- 4 b) Who has the comparative advantage in each task? Explain why.
- 6 c) Assume the two decide to get tasks done cooperatively and efficiently. Draw their combined PPF and remember to label each endpoint and any kink points with numerical values. Indicate who specializes in the production of what task on each line segment of this PPF.
- 2 d) What are the values for the marginal opportunity cost of solving equations along each segment of their combined PPF? For full credit make sure you indicate units of measurement.
- 8 e) Suppose Abe tires after spending 10 hours solving equations and once he tires, he can only solve 25 equations in an hour. Re-draw your combined PPF to reflect this reality wrinkle. Label each endpoint and kink point with numerical values. Indicate who is doing what as the team moves along the joint PPF from making only words to only solving equations.
- 2 f) What production point along the combined PPF is best?

Answer Space:

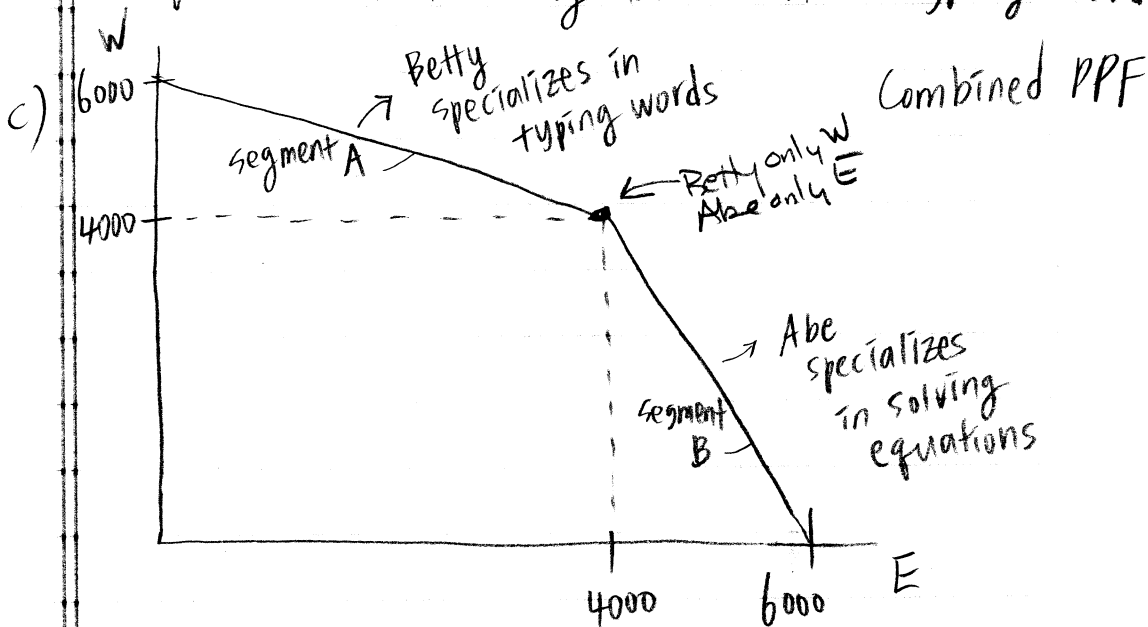
Re: Abe and Betty



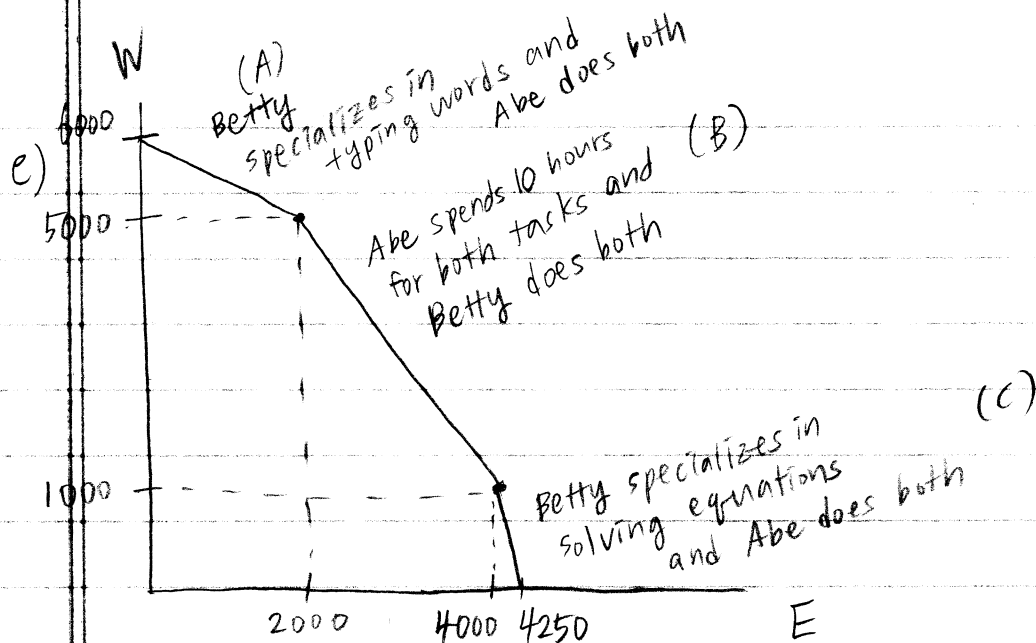
b) The MOC of E :

	Abe	Betty
	0.5 words	2 words

Abe has a lower MOC of E, so Abe has a CA in solving equations while Betty has a CA in typing words.



d) The MOC of E is $\frac{1}{2}$ words typed on segment A and 2 words typed on segment B.



After 10 hours, Abe's MDC of E becomes $\frac{100}{25} = 4$ words.

As they move along the PPF from making only words to solving equations, Abe first starts to solve equations while Betty specializes in typing words. After Abe solves equations for 10 hours, Betty starts to allocate her time for solving equations because Abe becomes less productive after 10 hours. After the point Betty specializes in typing words, Abe allocates his time for typing words again.

f) It depends on what "best" means for them. If they prefer having more words typed than equations solved, then the points on the segment (A) on the graph would be the best. On the other hand, if they prefer having more equations solved than words typed then the points on segment (C) would be the best.

The PPF is a descriptive representation on what is efficient (and not) NOT what is best.