

Econ 100
Spring 2015
First Mid-term
Date: February 24, 2015

Student Name ANNOTATED KEY

Version 1

READ THESE INSTRUCTIONS CAREFULLY.

DO NOT BEGIN WORKING UNTIL THE PROCTOR TELLS YOU TO DO SO

You have 75 minutes to complete this exam. The exam consists of three parts: Part I is 10 binary response questions worth 2 points each for a total of 20 points; Part II is 15 multiple choice questions worth 4 points each for a total of 60 points; and Part III is two problems worth 10 points each for a total of 20 points. Total number of points on the exam is 100 points.

DO NOT PULL THE EXAM APART OR REMOVE THE STAPLE.

WARNING: NO COMMUNICATION OR CALCULATING DEVICES, OR FORMULA SHEETS ARE ALLOWED. NO CONSULTATION AND CONVERSATION WITH OTHERS ARE ALLOWED WHILE YOU ARE TAKING EXAM OR IN THE EXAM ROOM. PLAGIARISM IS A SERIOUS ACADEMIC MISCONDUCT AND PUNISHABLE TO THE FULLEST EXTENT.

PICK ONLY ONE BEST ANSWER FOR EACH BINARY CHOICE OR MULTIPLE CHOICE QUESTION.

- If you believe there is an error on the exam or you do not understand something, make a note on your exam booklet and the issue will be addressed AFTER the examination is complete. No questions regarding the exam can be addressed while the exam is being administered.
- When you are finished, please get up quietly and bring your scantron sheet and this exam booklet to the place indicated by the proctor.

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DO NOT DETACH THIS SHEET FROM THIS EXAM BOOKLET!

I, _____, agree to neither give nor receive any help on this exam from others. I understand that the use of a calculator or communication device on this exam is academic misconduct. I also understand that providing answers to questions on this exam to other students is academic misconduct, as is taking or receiving answers to questions on this exam from other students. Thus, I will cover my answers and not expose my answers to other students. It is important to me to be a person of integrity and that means ALL ANSWERS on this exam are my answers. Any violation of these guidelines will result in a penalty of at least receiving a zero on this exam.

Signed _____

I. Binary Choice (10 questions @ 2 points each = 20 points)

READ CAREFULLY

1. A production possibility frontier helps us understand opportunity cost because it illustrates:

a) the efficient frontier of production for an economy. *this is true, but it doesn't help us understand O.C.*

b) that in choosing more of one thing we give up something else. ✓

EASY

2. Given a production possibility frontier, the points that are possible to produce are those points on or:

a) outside the frontier.

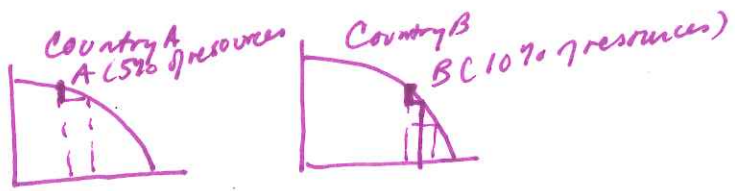
b) inside the frontier.

HARDER

3. Consider two countries, both of which can produce grapes and almonds. The principle of comparative advantage tells us that:

a) in order to gain from trade one country must be more efficient in producing grapes and the other country must be more efficient in producing almonds. *One country could be more eff. in both goods & trade could still be beneficial*

b) if one country is more efficient at producing both grapes and almonds but is twice as efficient at producing grapes and three times as efficient at producing almonds as the other country, then the two countries can gain from trade. *⇒ The two countries have different O.C.*



HARDER

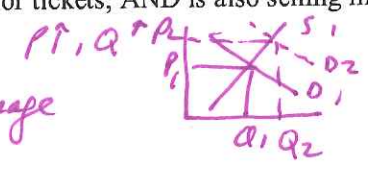
4. Suppose Country A and Country B have typical bowed out from the origin production possibility frontiers and that both countries are producing on their respective PPFs. Suppose Country A and Country B are both using the same technology for reducing deaths through public health programs. However, suppose that Country A currently puts 5% of its resources into reducing deaths through public health programs, and Country B currently puts 10% of its resources into doing this. Now suppose that both are considering putting another 1% more of their resources into reducing death through public health programs. The law of increasing opportunity cost, tells us that the country which will reduce deaths more (measured in percentage terms) from this additional 1% is:

- a) Country A.
- b) Country B.

Not too HARD

5. Suppose we observe a bus company that provides transportation between Madison and Milwaukee. We notice that for the coming weekend, the company has raised prices for tickets, AND is also selling more tickets. In the supply and demand model this indicates that the:

- a) supply curve for tickets shifted to the left. ~~X~~
- b) demand curve for tickets shifted to the right. Draw an image

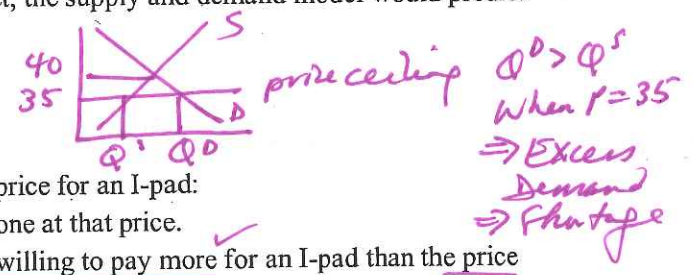


6. In the demand and supply model, if the price is below the equilibrium price, then an excess:
- a) supply will push the price down.
 - b) demand will push the price up.

EASY

7. Suppose the equilibrium price for bus tickets between Madison and Milwaukee is \$40. Then if the state government imposes a price ceiling of \$35 per bus ticket, the supply and demand model would predict that we would see:

- a) a shortage of tickets.
- b) a surplus on tickets.



DEFINITIONAL: EASY

8. "Consumer surplus" comes from the fact that at any price for an I-pad:
- a) some people who could buy an I-pad, refuse to buy one at that price.
 - b) some people who buy at this price would have been willing to pay more for an I-pad than the price charged.

For the next question refer to the table below.

Price (\$)	(Demand) Quantity of Tickets customers would buy per day	Room for scratch work if needed
\$ 50	700	35,000
\$ 60	650	39,000
\$ 70	600	42,000 * highest here
\$ 80	400	32,000
\$ 90	300	27,000 * lowest here

DO THE WORK

9. The demand for tickets for a bus company that operates between Madison and Milwaukee is shown in the above table. Given this information and holding everything else constant, the total dollar value of sales will be:

- Total dollar value of sales = $P(Q)$
- a) lowest at a price of \$50 and highest at a price of \$90.
 - b) highest at a price of \$70. ✓

← This is related to elasticity
 As $P \uparrow$, $TR \uparrow$ in inelastic part of demand
 As $P \uparrow$, $TR \downarrow$ in elastic part of demand

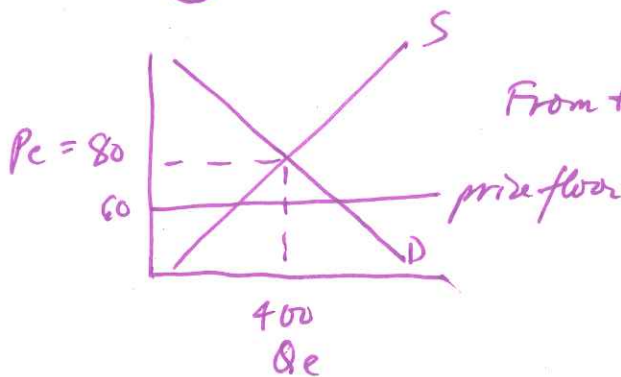
For the next question refer to the table below.

Demand and Supply Schedule for Round Trip Tickets from Madison to Milwaukee				
Price (\$)	(Demand) Quantity of Tickets customers would buy per day	Room for scratch work if needed	(Supply) Quantity of Tickets the Bus Company would supply per day	Room for scratch work, if needed.
\$ 50	700		200	
\$ 60	650		250	
\$ 70	600		300	
$P_e = \$ 80$	400 = Q_e since $Q^d = Q^s$		400	
\$ 90	300		500	

EASY, BUT YOU HAVE TO THINK

10. Given the above table and holding everything else constant, if the government implements a price floor of \$60 in this market, then we would see:

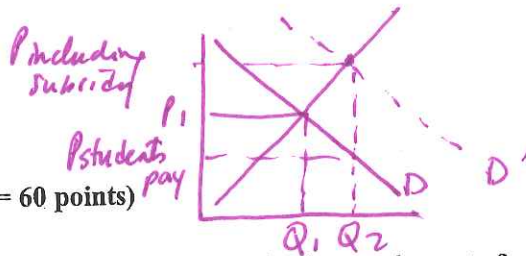
- a) a shortage of 400 tickets that people wanted to buy but were unavailable due to the implementation of this price floor.
- b) no effect on this market due to the implementation of this price floor.



From table, find P_e, Q_e first:

if price floor is less than P_e , is the price floor effective? No!

II. Multiple Choice; (15 Questions @ 4 points each = 60 points)



HARD

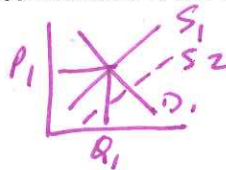
11. Suppose the federal government implements a new student loan program that lowers the cost of financing a college education for eligible students. Holding everything else constant, this new program will:

- a) shift the demand for college to the left and cause tuition to rise. ~~rightward shift~~
- b) shift the demand for college to the right and cause tuition to rise. ✓
- c) cause a movement along the demand curve for college due to a change in the price of college. ~~movement along~~
- d) have no effect on the demand for college. ~~causes a shift~~

EASY

12. Suppose that in a college town a number of new, private dormitories are built and this building boom substantially increases the total number of rooms available to students near campus. After this building boom, students observe that the price of these rooms falls (this takes the form of offers of the first month of housing being free). Holding everything else constant, this price reduction is due to a:

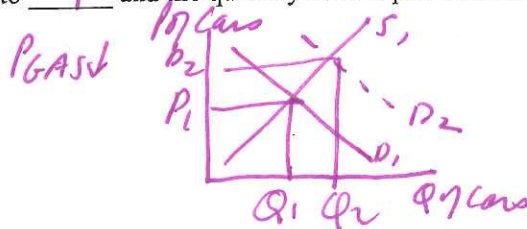
- a) shift to the right in the demand curve for rooms. ~~movement along~~
- b) shift to the left in the supply curve for rooms. ~~right~~
- c) movement along the supply curve for rooms. ~~shift~~
- d) shift to the right in the supply curve for rooms. ✓



EASY

13. Holding everything else constant, if the price of gasoline dropped substantially, we would expect the demand curve for cars to shift to the right, the price of cars to increase and the quantity of cars produced to increase.

- a) Shift to the right; decrease; increase ✓
- b) Shift to the right; increase; decrease ~~X~~
- c) Stay the same; increase; increase ~~X~~
- d) Shift to the right; increase; increase ✓



HARDER

14. Because people use cars to get to work, we would expect that the elasticity of demand for gasoline in the short run would be low or inelastic so that a fall in the price of gasoline due to fracking technology would cause the quantity of gasoline purchased to rise by a small amount.

- A) low or inelastic; rise by a great amount ~~X~~
- b) high or elastic; rise by a great amount ~~X~~
- c) low or inelastic; rise by a modest amount ✓
- d) low or inelastic; fall by a modest amount ~~X~~



lots of substitutes in the

HARDER

15. In the United States there are relatively few alternatives to driving a car for transportation, while in the Netherlands there are many alternatives to driving cars. Cars use more gasoline per person per mile than other forms of transportation. Therefore, we would expect the elasticity of demand for gasoline to be more elastic in the Netherlands than in the United States, and the percentage change in the amount of gasoline purchased when price increases by 10% to be larger in the Netherlands than in the United States.

- a) less elastic; larger ~~x~~
- b) less elastic; smaller ~~x~~
- c) more elastic; larger
- d) more elastic; smaller ~~x~~

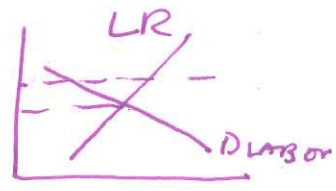
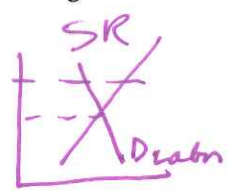
E^D in Netherlands larger \Rightarrow more elastic

$$E^D = \left| \frac{\% \Delta Q^D}{\% \Delta P} \right|$$

16. Wisconsin has 59,000 workers who earn the minimum wage of \$7.25 per hour. There has been recent discussion about raising the minimum wage in Wisconsin to \$10.10 per hour. In the short run (1 to 5 years) employers would have difficulty finding and implementing substitutes for labor (robots, self-serve), while in the long run we can anticipate that employers would be able to find substitutes for labor. Given this information and holding everything else constant, relative to the long run we would expect that in the short run the elasticity of demand for labor would be relatively inelastic and the ↓ in hiring would be relatively small if this new higher minimum wage was implemented.

EASY - DID THIS ONE IN CLASS

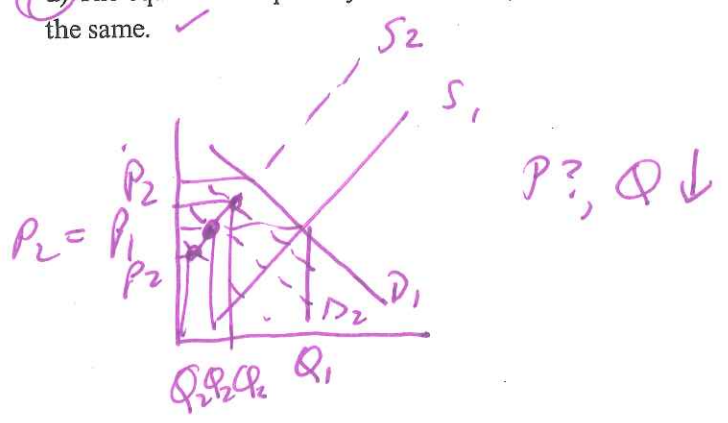
- a) decrease; large
- b) decrease; large
- c) decrease; small
- d) decrease; small



17. Suppose that the cost of producing widgets increases at the same time that widgets become less popular. Given this information, which of the following is true?

- a) The equilibrium quantity will decrease and the equilibrium price will increase. ~~x~~
- b) The equilibrium quantity may increase, decrease, or remain the same while the equilibrium price will increase. ~~x~~
- c) The equilibrium quantity may increase, decrease, or remain the same while the equilibrium price will decrease. ~~x~~
- d) The equilibrium quantity will decrease while the equilibrium price may increase, decrease, or remain the same. ✓

NOT THAT HARD IF YOU UNDERSTAND THE CONCEPT



NOT THAT HARD

18. Suppose that a country wishes to expand its production possibility frontier. If this country does not have any growth in population, any increase in capital or any technological improvements, then:
- a) it is not possible for this country to expand its PPF.
 - b) this country can expand its PPF with specialization even if it does not trade with other countries.
 - c) this country can expand its PPF with specialization and trade with other countries.
 - d) this country can expand its PPF with the implementation of tariffs and/or trade quotas to protect its domestic industries.

FAIRLY EASY

19. Wheelan argues that "every decision we make involves some kind of trade-off" (page 9). This concept is an illustration of:

- a. the supply curve concept.
- b. the demand curve concept.
- c. the Law of Increasing Opportunity Cost concept.
- d. opportunity cost.

→ o.c.

EASY

20. Black rhinos are endangered because:

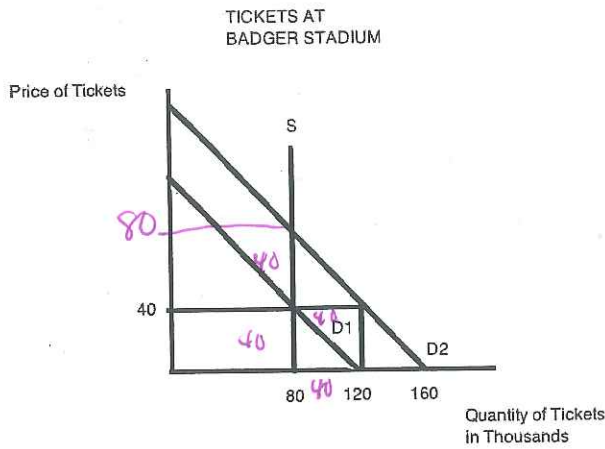
- a. a dead rhino is worth a lot of money to the individual(s) that kill the rhino relative to the cost to the individual(s) of getting caught killing a rhino. ✓
- b. they are a communal resource-that is, most black rhinos are not owned by any particular person. ✓
- c. as more and more black rhinos are killed the price of the black rhino horn increases which increases the incentive to kill even more black rhinos. ✓
- d. of the reasons provided in answers (a), (b) and (c).

DEFINITIONAL

21. Which of the following is true?

- a) Consumer surplus is the amount that consumers spend when purchasing a good or service. ✗
- b) Producer surplus is the amount that producers receive when selling a good or service. ✗
- c) Consumer surplus is the value to consumers of the good or service in excess of what consumers actually expend on the purchase of the good or service. ✓
- d) Producer surplus is the value to producers of the good or service in excess of what consumers actually expend on the purchase of the good or service. ✗

Use the figure below to answer the next question. In this figure, D_1 is the demand curve for tickets for a typical home game at Badger Stadium, which holds 80,000 fans, and \$40 is the ticket price. In the coming weekend however, a very big game is being played which shifts the demand curve to D_2 . Assume that D_1 and D_2 are parallel to one another.



22. Suppose the athletic department keeps the ticket price at \$40. The result of this decision is that there will be an excess demand of 40 thousand tickets. If the athletic department had allowed the price to rise without restriction, the price would have risen to \$80.

ARBITOR
A
CHALLENGE

- a) excess demand; 120; \$80
- b) excess demand; 40; \$120
- c) excess supply; 40; \$80
- d) excess demand; 40; \$80

23. Examine the t-account depicting Tom's assets and liabilities as of February 12, 2015 below to answer this question.

EASY - OUT OF LECTURE

Assets		Liabilities	
House	\$400,000	Mortgage	\$80,000
First Car	\$20,000	Car Loans	\$15,000
Second Car	\$10,000	Educational Loans	\$80,000
Furnishings	\$54,000		
Checking Acct.	\$3,000		
Retirement Accts.	\$120,000		

Assets
 430,000
 57,000
 120,000

 607,000 Assets
 - 175,000 Liabilities

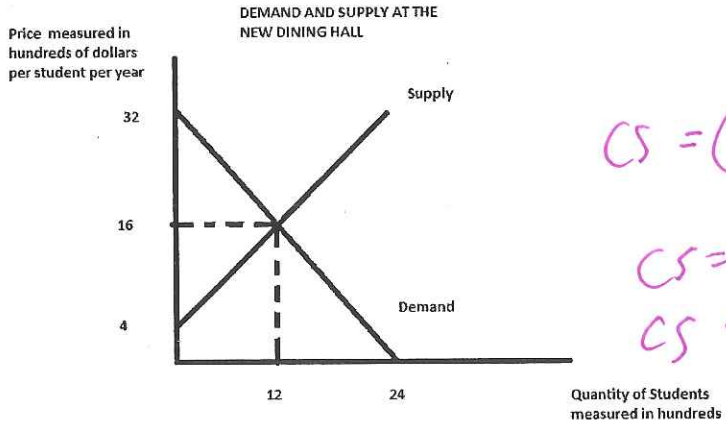
 432,000 Net Worth

Liabilities 175,000

Given the above information, what is Tom's net worth on February 12, 2015?

- a) \$1,485,000
- b) \$429,000, since the amount in the checking account should not be counted
- c) \$309,000, since the amounts in the checking account and the retirement accounts should not be counted
- d) \$432,000

For the next question refer to the following figure.



$$CS = \frac{(1600)(1200)}{2}$$

$$CS = (800)(1200)$$

$$CS = \$960,000$$

[Hint: After computing CS, check answers & eliminate Answers (a), (b) and (d)]

EASY

24. Suppose there is a proposal to operate a new dining hall on campus that has a limited menu: this proposal is a response to student demand for a less expensive alternative to the other dining halls on campus. At the new dining hall the menu would be all vegetarian; the hours of operation would be limited; and there will be no choice of dishes other than the vegetarian item and peanut butter and jelly sandwiches. The above figure illustrates the estimated demand and supply curves for this new dining hall. Based on this figure, the estimated consumer surplus in this market will be 960,000 and the estimated producer surplus in this market would be _____.

SAVES TIME

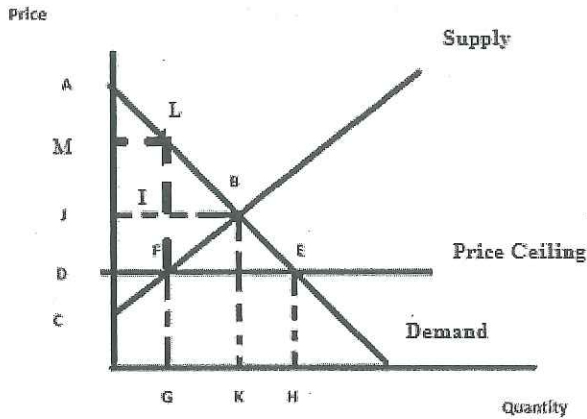
- a) \$1,920,000; 1,440,000
- b) \$1,440,000; \$1,920,000
- c) \$960,000; \$720,000
- d) \$720,000; \$960,000

$$PS = \frac{1}{2} (1200)(1200)$$

$$PS = 600(1200)$$

$$PS = \$720,000$$

For the next question refer to the following figure.

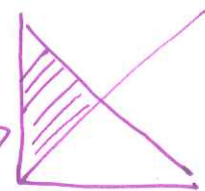


25. Suppose the government is currently NOT implementing the proposed price ceiling in the market depicted in the graph. Then, in this market the area ___ would be the total surplus. If the government then implements the price ceiling the total surplus would be area(s) ___ which is ~~larger~~ than the total surplus if this market did not have the price ceiling.

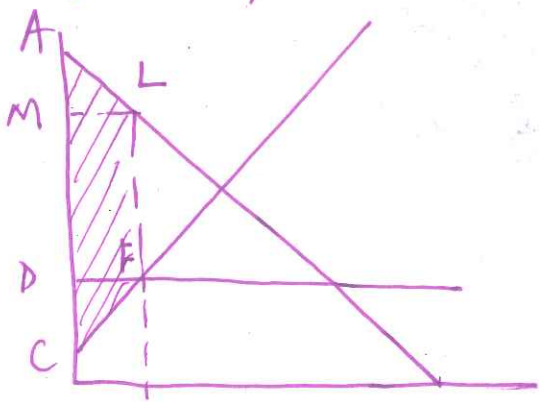
HARDER CONCEPTUALLY

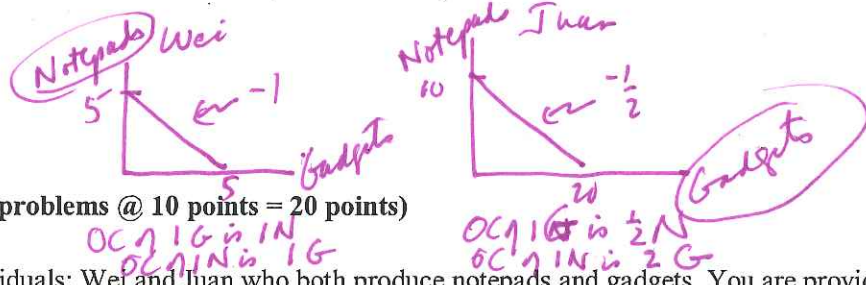
- a) ABC; BFE; larger ✓
- b) ABC; ALM + MLFC; smaller ✓
- c) ABI; JDEB; larger ✓ *wrong TS*
- d) ABC; ADE + DFC; larger ✓

TS = area ABC →



TS w/ price ceiling



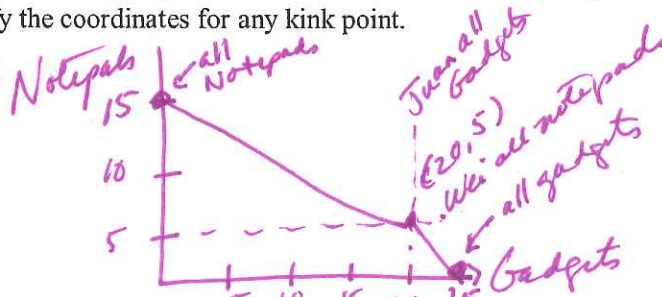


III. PROBLEMS (2 problems @ 10 points = 20 points)

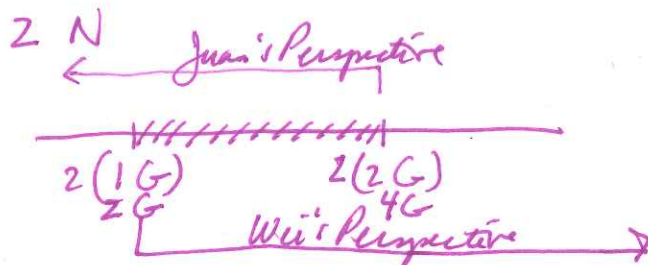
1. Consider two individuals: Wei and Juan who both produce notepads and gadgets. You are provided the following table which shows the maximum amount of either goods the two can produce if they only produce one of these goods. Both Wei and Juan have linear production possibility frontiers.

	Maximum Number of Notepads that Individual can Produce	Maximum Number of Gadgets that Individual can Produce
Wei	5 notepads	5 gadgets
Juan	10 notepads	20 gadgets

- a. (1 point) Given the above information, who has the absolute advantage in the production of notepads? Juan 10 > 5
- b. (1 point) Given the above information, who has the absolute advantage in the production of gadgets? Juan 20 > 5
- c. (1 point) Given the above information, who has the comparative advantage in the production of gadgets? Juan
- d. (1 point) Given the above information, who has the comparative advantage in the production of notepads? Wei
- e. (1 point) What is the opportunity cost for Juan of producing 1 gadget? Provide the numeric value as well as the units of measurement in your answer. 1 Notepad
- f. (1 point) What is the opportunity cost for Wei of producing 1 notepad? Provide the numeric value as well as the units of measurement in your answer. 2 gadgets
- g. (2 points) In the space below draw the joint PPF for Wei and Juan. Measure Notepads on the vertical axis and gadgets on the horizontal axis. Make sure you identify all intercepts and that you identify the coordinates for any kink point.



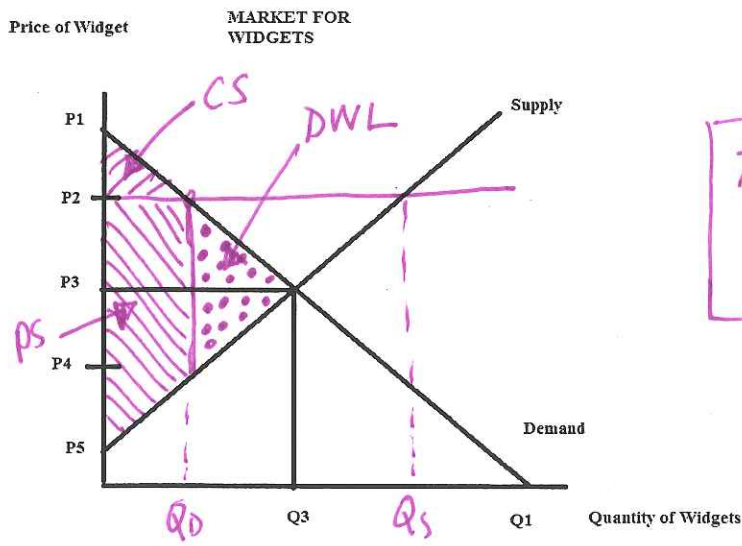
- h. (2 points) In the space below provide a number line to illustrate the range of trading prices in terms of gadgets that 2 notepads will trade for. Make sure your number line is clearly and completely labeled and make sure it includes arrows indicating Wei's perspective and Juan's perspective.



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DO NOT DETACH THIS SHEET FROM THIS EXAM BOOKLET!

2. Consider the market for widgets depicted below:



This is like Question 25 on the exam!

a. (1 point) Given the above graph, the equilibrium price for a widget is P3 and the equilibrium quantity of widgets is Q3.

b. (1/2 point) Suppose that the government sets an effective price control in this market equal to P2. Given the above graph, this price control is an example of a price floor (ceiling or floor).

To be effective, price floors must be > equilibrium price

c. (1/2 point) If the effective price control is set at P2, this market ^{will} have excess supply (excess demand or excess supply).

d. (2 points) On the graph, mark the quantity demanded as Qd and the quantity supplied as Qs given this price control.

e. (2 points) Given this effective price control, identify on the graph (by shading) the area that corresponds to Consumer Surplus (CS) when this price control is implemented. Label this area clearly.

f. (2 points) Given this effective price control, identify on the graph (by shading with a different pattern than that used in (e)) the area that corresponds to Producer Surplus (PS) when this price control is implemented. Label this area clearly.

g. (2 points) Given this effective price control, identify on the graph (by shading with another different pattern than that used in (e) and (f)) the area that corresponds to Deadweight Loss (DWL) when this price control is implemented. Label this area clearly.