Economics 101	Name ANNOTATED KEY
Spring 2017	TA Name _____
February 28, 2017	Discussion Section # _____
First Midterm	Student ID # _____

Version 1

DO NOT BEGIN WORKING UNTIL THE INSTRUCTOR TELLS YOU TO DO SO
READ THESE INSTRUCTIONS FIRST.

You have 75 minutes to complete the exam, **including filling in your scantron**. The exam consists of **12 binary choice questions worth 3 points each** and **20 multiple choice questions worth 5 points each for a total of 136 points**. If you accurately fill out your scantron and your exam booklet you will get one administrative point for a total of 137 points on this exam. Please accurately and completely provide your **name, ID number, discussion section number, version number, and TA name** on the scantron sheet and the exam booklet. Answer all questions on the scantron sheet with a #2 pencil. There are 20 printed pages in this exam, including this cover sheet. **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 THE EXAM OR IN THE EXAM ROOM. ACADEMIC MISCONDUCT IS A SERIOUS OFFENSE AND PUNISHABLE TO THE FULLEST EXTENT. PICK THE BEST ANSWER FOR EACH QUESTION.

How to fill in the scantron sheet and other information:

1. Print your last name, first name, and middle initial in the spaces marked "Last Name," "First Name," and "MI." Fill in the corresponding bubbles below.
2. Print your student ID number in the space marked "Identification Number." Fill in the bubbles.
3. Write **the number of the discussion section you've been attending under "Special Codes" spaces ABC**, and fill in the bubbles. At the bottom of this page you will find the discussion numbers.
4. Write the **version number** of your exam booklet under "Special Codes" space D, and fill in the bubble. The version number is at the top of this page.

- **If 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 instructors.**

Pedro Guinsburg	Samantha Schreiber	Annie Lee	Saiah Lee
301 Th 4:35 PM Soc Sci 6322	**303** Th 4:35 PM Soc Sci 6101	**302** Fr 2:25 PM Soc Sci 6102	**304** Fr 2:25 PM Soc Sci 6240
305 Fr 11:00 AM Van Hise 395	**307** Fr 9:55 AM Van Hise 583	**308** Fr 9:55 AM Van Hise 595	**310** Fr 12:05 AM Van Hise 391
306 Fr 8:50 AM Sterling 1407	**311** Fr 8:50 AM Ingraham 120	**309** Fr 11:00 AM Van Hise 383	
312 Th 3:30 PM Soc Sci 6224			

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EXAM CONTINUES ON NEXT PAGE

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 Questions (12 questions worth 3 points each)

DEFINITIONAL

1) Consider the statement: "An increase in import taxes will increase retail prices and the costs of production." This statement is an example of:

a. Normative Analysis.
b. Positive Analysis.

can collect data to see if this happens: not an opinion; not about what should be or ought to be

EASY

2) Sam Seaborn is a speech writer. Seaborn can produce 5 speeches (S) in one day if he receives 3 bars of gold. It is also known that, for each extra bar of gold received, Sam produces a third of a speech. The equation that describes Sam's offer of speeches in terms of bars of gold (G) is:

a. S = (1/3)*G + 4
b. S = 3*G + 4

if $G = 3 \Rightarrow S = 5$

$S = \frac{1}{3} G + 4$

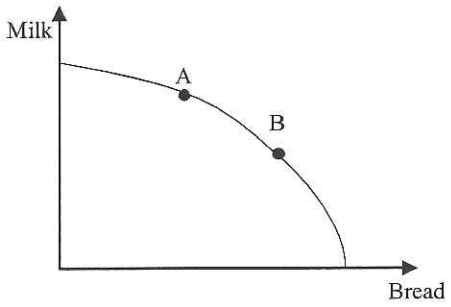
if $G = 3 \Rightarrow S = 5$

$S = 3 \cdot G + 4$

if $G = 3 \Rightarrow S = 13$ X

EASY: DEFINITIONAL

3) Given the PPF in the figure below, which of the following statements is true?



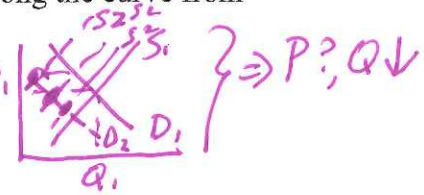
(a.) The opportunity cost of bread increases when moving along the curve from point A to point B. T LAW OF INCREASING OC

b. The opportunity cost of bread decreases when moving along the curve from point A to point B. F

SOME READING & INTERPRETATION REQUIRED: BUT NOT HARD

4) Indicate which option is correct:

Demand shifts left; supply shifts left



a. Consider the market for domestic steel: trade agreements result in fewer consumers of domestic steel at the same time that the trade agreement calls for domestic steel workers to receive higher wages. Given these two changes and holding everything else constant, then the new equilibrium quantity in this market is ambiguous X and the new equilibrium price of steel is higher than the initial price of steel. X P ?, Q ↓

(b.) Holding everything else constant, a change in the price of the good X will cause a movement along the demand and supply curves for good X while an increase in GDP per capita in a country will cause the demand curve for good X to shift. True

NOT TOO HARD

5) The price of beer is expected to go down in the future. Holding everything else constant:

a. This causes a movement along the demand curve for beer.

(b.) This causes a shift in the demand curve for beer.

price expectations cause shift ⇒ if I expect the price of beer to be cheaper soon, then at every price I will demand less beer today

S+D ANALYSIS: NOT HARD

6) Suppose that construction companies in the United States import cement from China as an input in their production. The price of fly ash, a substitute for cement, has recently surged in China because of the disruptions in their supply lines for this product. Given this information and holding everything else constant, you predict that these changes will lead the supply curve for the US construction industry to:

$P_{FLY\ ASH} \uparrow \Rightarrow P_{CEMENT} \uparrow$

a. Shift to the right.
(b.) Shift to the left. As input costs ↑ (price of cement now more expensive) supply curve will shift to the left

DEFINITIONAL: NOT HARD

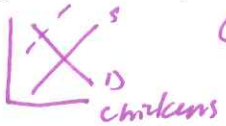
7) The price of a good increased during the recent Great Recession of 2008. Given this information and holding everything else constant, we conclude that the good is:

Great Recession ⇒ Incomes fall ⇒ If $Q^D \uparrow$ as income falls, then good is an inferior good

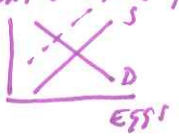
a. A normal good.
(b.) An inferior good.

HARD: LOTS OF STEPS

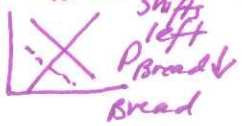
8) Suppose that eggs and bread are complements. The outbreak of AI (avian influenza) diseases resulted in the slaughter of many infected chickens. People believe that AI does not affect the quality or safety of the eggs produced by chickens. Given this information and holding everything else constant, the price of bread will:



$Q_{chickens} \downarrow \Rightarrow Q^S_{Eggs} \downarrow$



$P_{eggs} \uparrow \Rightarrow Q_{Bread} \downarrow \Rightarrow D_{Bread}$ shifts left $\Rightarrow P_{Bread} \downarrow$

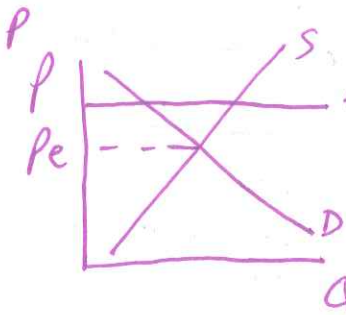


a. Increase.
(b.) Decrease.

EASY

9) The implementation of an effective price floor program in the market for apples will cause the _____ that consumers pay and producers receive to _____.

(a.) Price; Increase
b. Quantity; Increase



effective price floor ⇒ price consumers pay is greater than Pe

STRAIGHT-FORWARD: NOT HARD

10) Consider the market for corn with a linear downward sloping demand curve and a linear upward sloping supply curve. Under an effective government subsidy, or price guarantee program, what happens to the price consumers pay and that quantity that consumers purchase, compared to the market without the program?

a. The price consumers pay will decrease while the quantity they consume will increase with this program.
b. The price consumers pay will increase while the quantity they consume will decrease with this program.

NOT HARD

11) Consider a market with an upward sloping supply curve and a downward sloping demand curve. Suppose that an effective price ceiling is implemented by the government into this market. This effective price ceiling will:

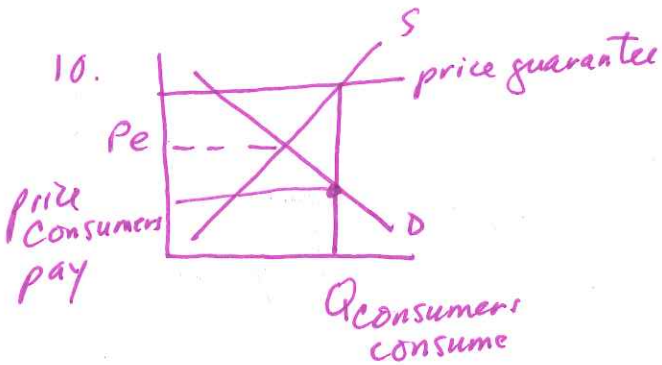
a. Decrease the producer surplus.
b. Result in an excess supply of the good.
↳ excess demand

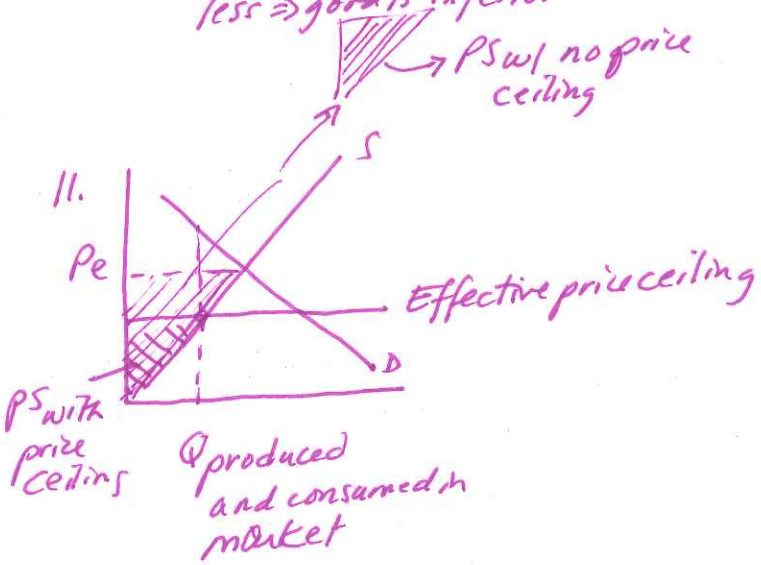
NOT HARD

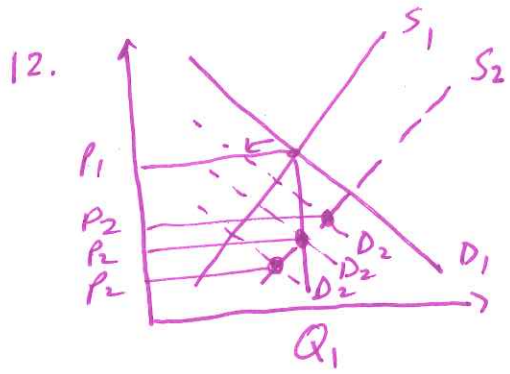
12) A market for a good is initially in equilibrium. Then people's incomes rise while at the same time the number of firms producing this product increase. If you are told that the new equilibrium price is definitely lower than the initial equilibrium price, then it must be the case that this good is a(n): ↳ Demand must shift left ⇒ incomes rise & at each price people demand less ⇒ good is inferior

S to S_2

a. Normal good.
b. Inferior good.







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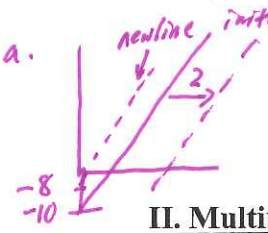
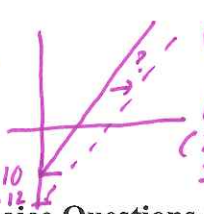
13. a. 

b. 

(0,-10) is on the first line ⇒ is (2,-10) on second line?

a. $Q = \frac{1}{3}P - \frac{10}{3}$

$\frac{1}{3}P = Q + \frac{10}{3}$

$P = 3Q + 10$

if costs go by 4 ⇒ new supply is

II. Multiple Choice Questions (20 questions worth 5 points each)

$y = 3x - 12$ if $x = 2 \Rightarrow y = -6 \Rightarrow$ No

$P = 3Q + 14$

$3Q = P - 14$

$Q = \frac{1}{3}P - \frac{14}{3}$

HARD

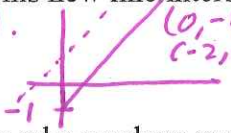
13) Which of the following statements is true?

a. If we shift the line y = 3*x – 10, two units to the right we get the line y = 3*x – 8. No

b. If we shift the line y = 3*x – 10, two units to the right we get the line y = 3*x – 12 and the equation in x-intercept form is x = 4 + y/3. No

c. Suppose that the supply curve is initially given as Q = (1/3)P – (10/3). If the costs of producing the good increases by $4 per unit then the new supply curve is Q = (1/3)P – (14/3). ✓

d. Suppose the line y = 3*x – 1 shifts 2 units to the left. This new line intersects the line y = 2/3 – x/5 when y = 10/3.

d. 

(0,-1) on initial line ⇒
(-2,-1) on new line ⇒

$y = 3x + b$

$-1 = (3)(-2) + b$

$5 = b$

$y = 3x + 5$

$3x + 5 = \frac{2}{3} - \frac{x}{5}$

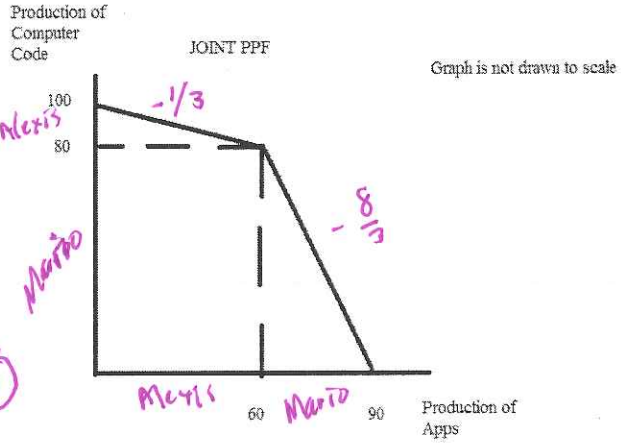
$45x + 75 = 10 - 3x$

$48x = -65$

terrible #'s – I doubt this could be right ⇒ I am confident on (c) ⇒ So I will take (c) as my answer

SOME WORK HERE

14) The graph below shows the joint PPF for Alexis and Mario who produce computer codes and app ideas. You are told that the opportunity cost for Alexis of producing one unit of computer codes (C) is 3 app ideas (A).



Mario

(c) $C = 80 - \frac{8}{3}A$

80

-8/3

30 A

C Alexis

20

-1/3

60 (A)

Given this information and holding everything else constant, which of the following statements is true?

I. Mario's PPF can be written as C = 80 – (8/3)A. ✓
II. Mario has the comparative advantage in the production of computer codes. ✓
III. Alexis has the absolute advantage in the production of app ideas. ✓
IV. Alexis' PPF can be written as A = 100 – (1/3)C. X

(c) $C = 20 - \frac{1}{3}A$

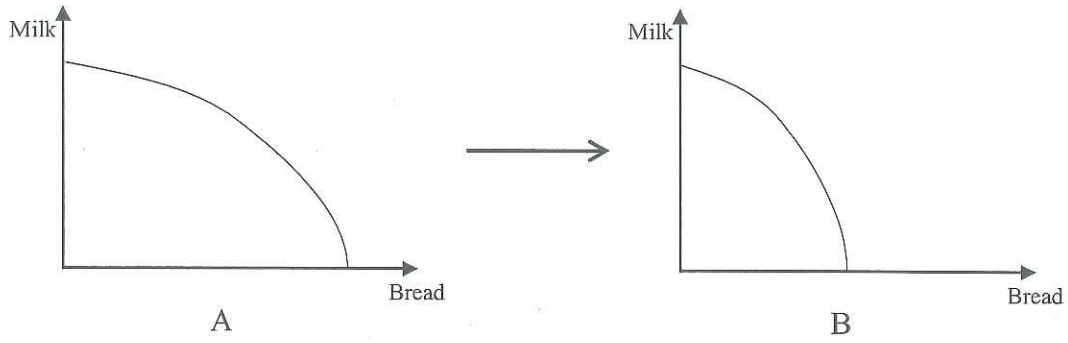
$\neq \frac{1}{3}A = 20 - C$

$A = 60 - 3C$

a. Statements I and II are true.
b. Statements I, II and III are true.
c. Statements II and IV are true.
d. Statements I, III and IV are true.

NOT TOO BAD

15) Suppose that the PPF for an economy changes from graph A to graph B. Which of the following statements offer the best explanation for this change?



a. Foot-and-mouth disease, a severe and highly contagious viral disease among cows, spreads extensively and many cows die as a result. No ⇒ Milk max. production has not changed
b. Animal scientists at University of Wisconsin find a new technology to increase milk production. No, milk max. production has not changed
c. During the growing season there is an infestation of locusts and these locusts severely damage many grain crops. ✓
d. People develop a taste for rice and now consume less bread. ✗ This is not SYD analysis ⇒ this is production possibility frontier - what are we capable of producing

NOT TOO BAD

16) Mark can produce cool ideas (I) or excellent cakes (C). He takes 6 hours to produce a cool idea and 2 hours to produce 30 cakes. A day of work for Mark has 12 hours. Given this information and holding everything else constant, which of the following statements is true?

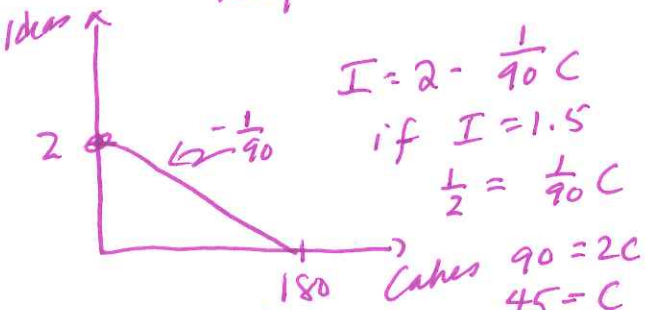
a. In a single day if Mark produces 1.5 ideas, then he can produce 100 cakes. X no just 45 cakes
b. Mark's opportunity cost of producing an additional cake is 2 ideas. X
c. Mark's opportunity cost of producing an additional cake is 1/30 ideas. X
d. Mark's opportunity cost of producing an additional idea is 90 cakes.

NOT THAT BAD

17) John lives in the Caribbean. He spends his time reading books and writing novels. Suppose it takes John 2 years to produce a book and it takes John 3 months to read a book. John has three years of time to live in his Caribbean paradise before he has to return to his usual business of engaging in economic research. Once he is back to economic research he will have no time to write books or read books. Given this information and holding everything else constant, which of the following statements is true?

a. If John writes 1.25 books, then he can still read 10 ~~books~~ 2 X during his time in the Caribbean. X
b. John's opportunity cost of writing one book is 8 books read. ✓
c. If John reads 6 books while in the Caribbean, he will still be able to write 80% ~~of~~ 75% a novel. X
d. If John writes a novel while in the Caribbean, he will still be able to read 4.5 X 4 books. X

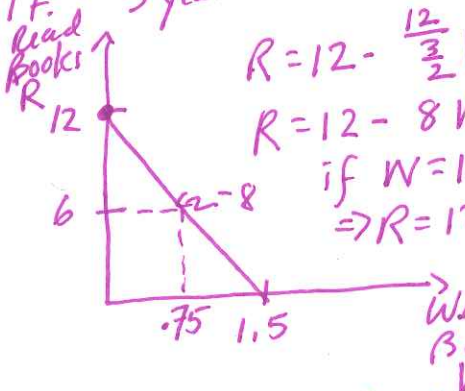
16. Mark
1 day = 12 hours



$I = 2 - \frac{1}{90}C$
if $I = 1.5$
$\frac{1}{2} = \frac{1}{90}C$
$90 = 2C$
$45 = C$

OC of 1C is $\frac{1}{90}$ Idea
OC of 1 Idea is 90 C

17.



3 years ⇒ 36 months

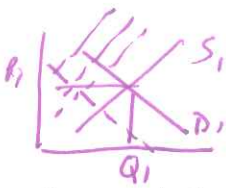
$R = 12 - \frac{12}{\frac{3}{2}}W$
$R = 12 - 8W$
if $W = 1.25 = \frac{5}{4}$
$\Rightarrow R = 12 - 8(\frac{5}{4}) = 2$ books read

$12 \div \frac{3}{2}$
$12 \times \frac{2}{3} = 8$

OC of Writing One Books is 8 Books Read

if $W = 1 \Rightarrow R = 12 - 8(1) = 4$ books read

↓ in # of immigrants ⇒ ↓ in pop ⇒ shift in D from D_1 to D_2 ⇒ leftward shift
↓ in # of workers ⇒ wages ↑ ⇒ Supply will shift left



Demand shifts left & Supply shifts left
Qe↓, P?

PREDICTABLE: INDETERMINANCY

18) Which of the following statements is true?

a. If immigration laws grow more stringent this will result in a decrease in the number of immigrants in the United States. It will also result in a reduction in the number of workers in the United States. In a given market for good X, these changes will result in a decrease in the equilibrium price in the market and an indeterminate effect on the equilibrium quantity in the market.
b. If immigration laws grow more stringent this will result in a decrease in the number of immigrants in the United States. It will also result in a reduction in the number of workers in the United States. In a given market for good X, these changes will result in an increase in the equilibrium price in the market and an indeterminate effect on the equilibrium quantity in the market.
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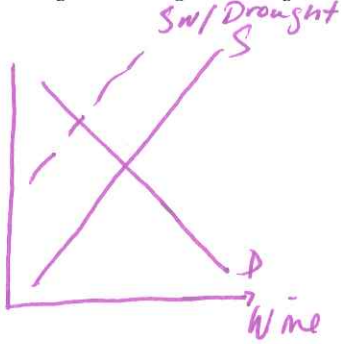
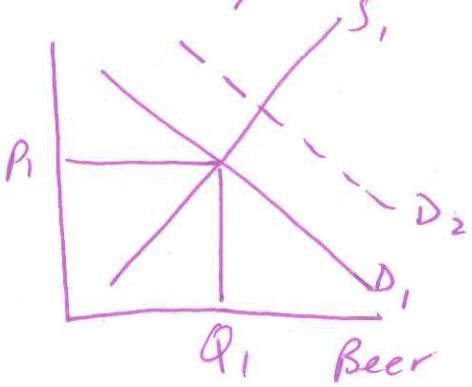
SOME THOUGHT HERE

19) Beer and wine are substitutes. Because of severe draught, the supply of wine was hugely affected. Given this information, in which of the following scenarios will the change in the equilibrium quantity of beer be ambiguous?

a. The price of barley, an essential ingredient in beer, has fallen greatly, reducing the cost of producing beer greatly. Q_{BEER} ↑ w/ right shift of S
b. Researchers discover that drinking a cup of beer everyday reduces the possibility of cardiac diseases by 31%, and the public believes this discovery. Don't know size of shift
c. Workers working at beer companies recently went on strike and successfully demanded higher wages. Q_{BEER} ? w/ left shift of S given D shift
d. Beer companies expect the price of beer to fall. Q_{BEER} ↑ today



P_{wine} ↑



Use the following information to answer the next <u>three (3)</u> questions.

Consider the production possibilities in Canada, USA, and Mexico in the table below. The entries in the table show the maximum amount of the product the country can produce using all their resources, technology and time to the production of the good. All three countries are assumed to have linear production possibility frontiers.

	Units of Food	Computers
Canada	400	400
Mexico	500	200
USA	800	600

NOT SO BAD

20) Given the above information and holding everything else constant, which of the following statements is correct?

a. Canada has absolute advantage in the production of computers. X US
b. Mexico has comparative advantage in the production of food. ✓ T
c. USA has comparative advantage in the production of computers. Not relative to Canada - F
d. USA has a smaller opportunity cost in the production of computers than Canada. F

HARDER

21) In 1994 all three countries joined the North American Free Trade Agreement (NAFTA), and that meant they could now freely trade any goods and services. Suppose that the USA decides to import some computers and export some food. Given this information, which of the following is a possible trading price for a computer in terms of food?

a. One computer trades for 3/4 units of food. other country - Canada unwilling
b. One computer trades for 1 unit of food. ✓
c. One computer trades for 2 units of food. X
d. One computer trades for 3 units of food. X

IF YOU READ OPTIONS (D) IS AN ANSWER YOU MIGHT JUST KNOW IS RIGHT! NOT HARD

22) Suppose that the USA decides to quit the North American Free Trade Agreement (NAFTA), and only Canada and Mexico are left in the trade agreement. Given this information and holding everything else constant, which of the following statements is correct?

a. There are two kink points in the joint PPF of Canada and Mexico. X
b. The maximum trading price for one computer is 4/3 units of food. X 1/2 F !
c. The USA will be able to consume more units of food and computers now that they have left the trade agreement. F
d. Canada and Mexico cannot consume as much as they used to when the trade agreement was in place. T

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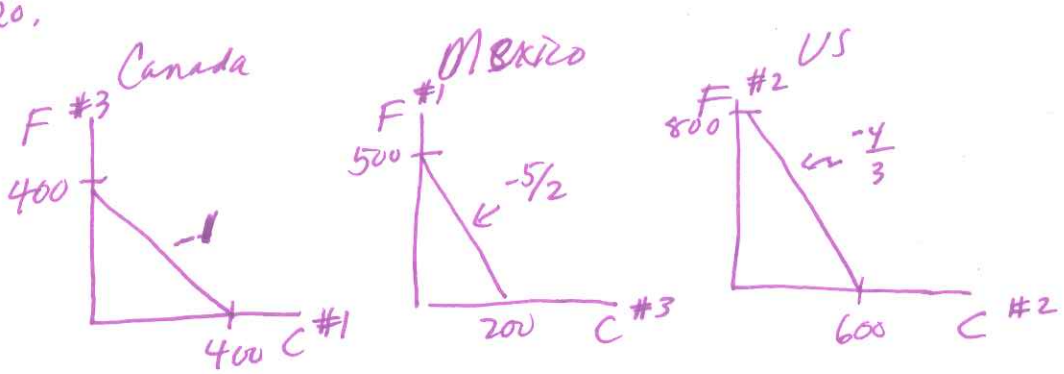
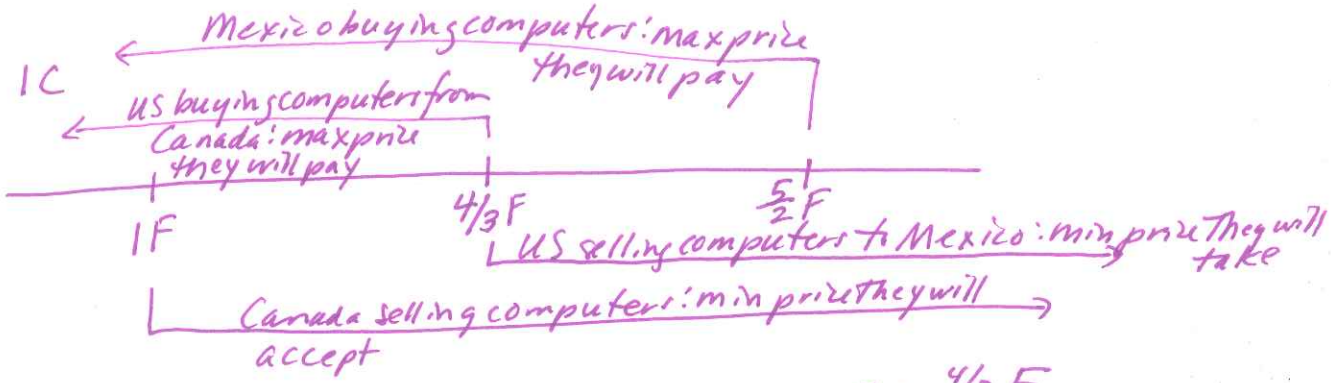


OC of 1C is 1F
OC of 1F is 1C

OC of 1C is $\frac{5}{2}$F
OC of 1F is $\frac{2}{5}$C

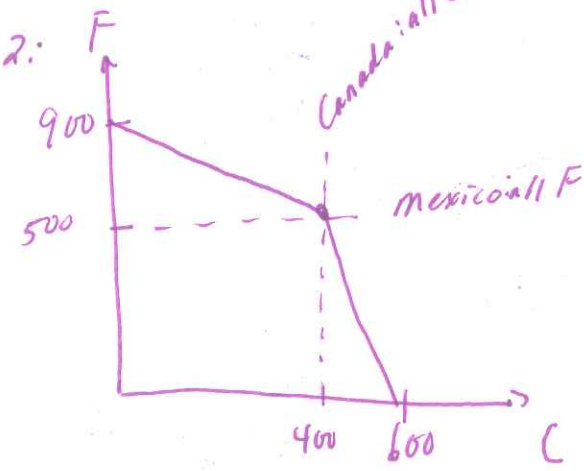
OC of 1C is $\frac{4}{3}$F
OC of 1F is $\frac{3}{4}$C

21.

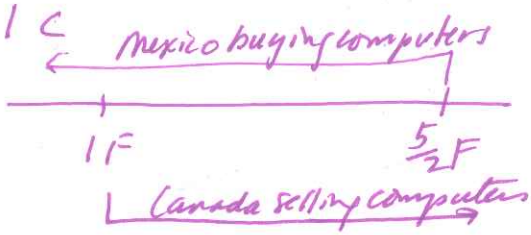


US buying computers => will not pay more than $\frac{4}{3}$F
US selling food => will not accept less than $\frac{3}{4}$C

22:



One kink point



Use the following information to answer the next <u>two (2)</u> questions.

Assume that there are only four consumers of computer chips in the economy. The equations below provide the individual demand curves for computer chips for these four consumers where P is the price per computer chip and q is the quantity of chips demanded by the specific individual:

Sam: $P = 20 - 2q$
John: $P = 20 - q$
Dan: $P = 10 - q$
Kim: $P = 10 - 2q$

SOMEWORK, BUT DOABLE

23) How many statements about the market demand inside the box are correct?

T	(•)	The market demand for computer chips is 3 when the price of computer chips is 18.
F	(•)	When $10 \leq P \leq 20$, the slope of the market demand curve is -1.5. ✗ $= -2/3$
T	(•)	When $0 \leq P \leq 10$, the slope of the market demand curve is -1/3. ✓ $-10/30 = -1/3$
F	(•)	The x-intercept of the market demand curve is 60. ⇒ x-intercept is 45

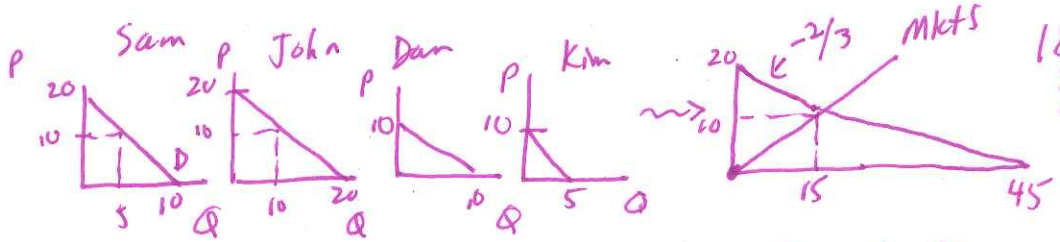
a. One statement is true.
b. Two statements are true.
c. Three statements are true.
d. Four statements are true.

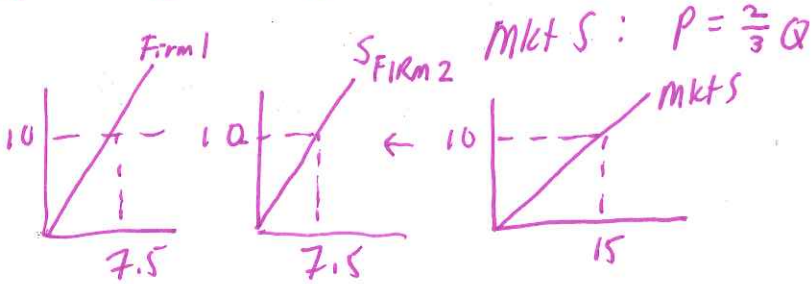
BACK OF LINCOLN: NOT SO BAD IF YOU CAN "SEE" IT!

24) Now, suppose the market supply curve goes through the origin and the kink of the market demand curve that you derived in the last question. Assume there are only two identical firms producing computer chips in the economy. Given the above information and holding everything else constant, what is the slope of each **<u>individual</u>** firm's supply curve?

a. 2/3
b. 4/3
c. 3/2
d. 3/4

if $P = 18$, what is Q^D?
$P = 20 - \frac{2}{3}Q$ is equation for top segment of D curve
$18 = 20 - (\frac{2}{3})Q$
$\frac{2}{3}Q = 2$
$Q = 2(\frac{3}{2}) = 3$





Mkt S: $P = \frac{2}{3}Q$

slope of firm 1's supply curve $= \frac{10}{7.5} = \frac{4}{3}$

TOUGH ONE!

25) The table below depicts average earnings and earnings inequality - measured by a Gini Index - on earnings, for Greece, Norway and the United States. Inequality is measured in ascending form by the index: that is, a low Gini Index number (close to zero) for a country represents lower income inequality while a high Gini Index number (close to one) for a country represents higher income inequality.

Country	Age	Average hourly earnings (in US Dollars)	Earnings inequality (Gini Index)
Greece	15-29	8.27	0.17
	30-49	12.57	0.17
	50-64	13.34	0.17
Norway	15-29	21.69	0.12
	30-49	33.25	0.12
	50-64	35.05	0.12
United States	15-29	17.88	0.35
	30-49	28.79	0.35
	50-64	30.22	0.35

[Data Source: OECD Stat]

Based on the information given, it is correct to say that:

CLOSE READING REQUIRED HERE!

a. The inequality of earnings in the United States is less than 200% of the inequality of earnings of Greece and more than 300% of the Norwegian one. (more / less) F
b. The earnings of the Greeks in the range 50-64 years of age is slightly more than 30% of the Norwegian in the same threshold and the Norwegian inequality of earnings in the same age range is less than 30% of the North American one. (less) No
c. Greeks in all three age ranges earn less than 50% of the wages of the Americans in the same category but the level of American income inequality as measured by the Gini Index number is more than 100% that of the Greeks.
d. Norway is the country that has the lowest level of income equality as measured by the Gini Index number amongst the three nations.

→ Should be inequality

b) 30% of Norwegian in 50-64 = .30(.12) = .036

.036 + .12 = .156 ≠ .17

c). 50(.35) = .1750 > .17;

$\left[\frac{.35-.17}{.17}\right](100) = \frac{18}{17}(100) > 100\%$

Use the following information to answer the next <u>three (3)</u> questions.

The demand and supply equations for eggplants are given by the following equations, where Q is the quantity measured in pounds and P is price per pound:

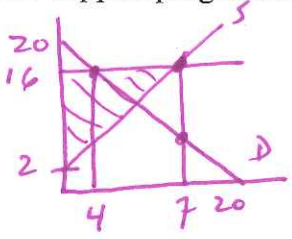
Demand for eggplant: $P = 20 - Q$
Supply for eggplant: $P = 2 + 2Q$

The government intends to interfere in the market with a price support or price guarantee program. The cost to the government of storing eggplants that are not purchased in the market by consumers is \$2 per pound of eggplant.

NOT HARD

26) Suppose the government implements a price support program and sets the price support price at \$16 per pound of eggplant. The cost to the government for this program including storage costs is _____ and the producer surplus after the implementation of the price support program is _____.

a. \$48; \$49
b. \$54; \$49
c. \$32; \$36
d. \$49; \$48



govt buys 3 pounds of eggplant
cost of purchase $3 \times 16 = 48$
+ storage cost $2 \times 3 = 6$
\$54
$PS = \frac{1}{2}(16-2)(7) = \$49$

COULD STOP HERE - ONLY ONE ANSWER WITH \$54!

A LOT OF WORK: HARD

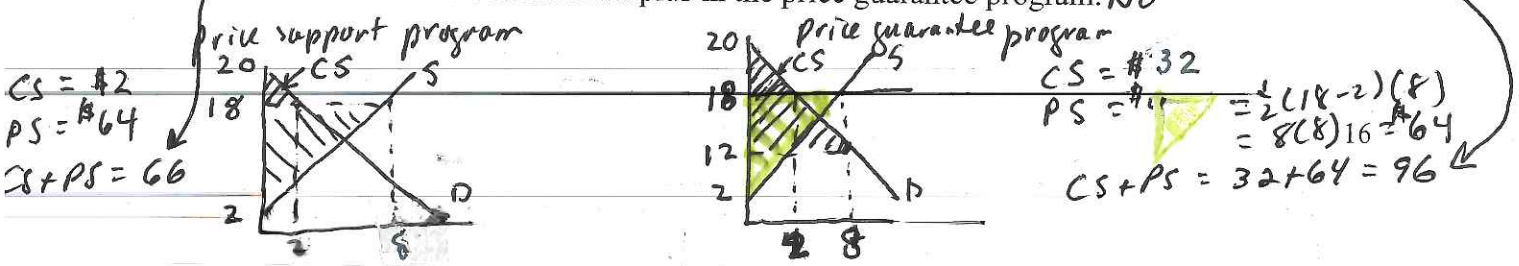
27) Now suppose the government wants to replace the price support program with a price guarantee program or subsidy program that costs a similar amount as the price support program from the previous question. Which of the following subsidy amounts per pound of eggplant results in the government cost of the price guarantee program being **<u>closest</u>** to the cost to the government of the price support program?

a. \$4 per pound of eggplant
b. \$6 per pound of eggplant
c. \$8 per pound of eggplant
d. \$10 per pound of eggplant

SOME REASONING HERE: SOMEWHAT HARD!!

28) In comparing the consumer and producer surplus of the price support and price guarantee program in the previous two questions, which of the following statements is **<u>true</u>** regarding the consumer and producer surpluses?

a. The price support program has a bigger consumer surplus, the price guarantee program has a bigger producer surplus. No
b. The price support program has a bigger producer surplus, the price guarantee program has a bigger consumer surplus. No
c. The price guarantee program has a bigger consumer and producer surplus.
d. There is no consumer surplus in the price guarantee program. No



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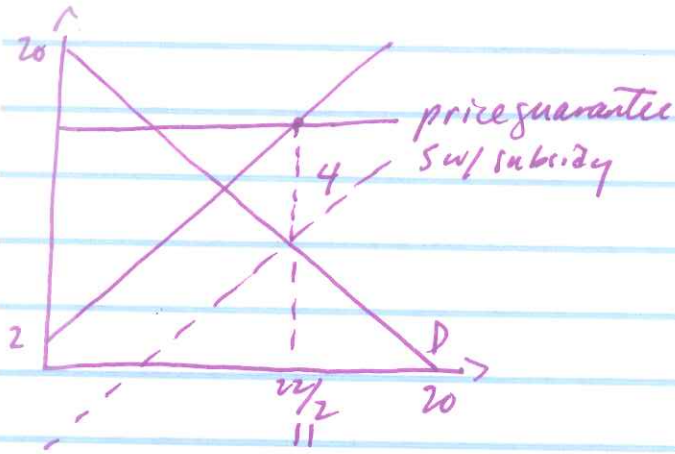
EXAM CONTINUES ON NEXT PAGE

#27.



if subsidy is #4 ⇒ S w/ subsidy: $P = -2 + 2Q$

$-2 + 2Q = 20 - Q$

$3Q = 22$

$Q = 22/2 = 11$

Cost to govt = (4/unit)(11 units) = #44

if subsidy is #6 ⇒ S w/ subsidy: $P = -4 + 2Q$

$-4 + 2Q = 20 - Q$

$3Q = 24$

$Q = 8$

cost to govt = (6)(8) = #48

#48 is closer to #54 than is #69 1/3

if subsidy is #8 ⇒ S w/ subsidy: $P = -6 + 2Q$

$-6 + 2Q = 20 - Q$

$3Q = 26$

$Q = 26/3$

Cost to govt = $(8)(26/3) = 208/3 = \#69\frac{1}{3}$

#54

Use the following information to answer the next <u>three (3)</u> questions.

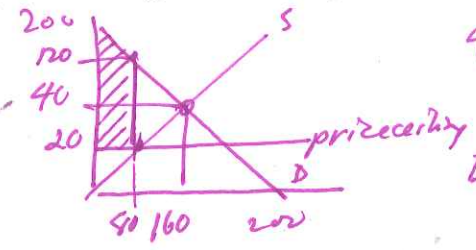
Consider the market for gasoline. The supply and demand curves, measured in gallons, are represented by the following equations:

Supply for Gasoline: Q = 4P
Demand for Gasoline: Q = 200 – P

NOT BAD

29) Suppose the government implements a price ceiling of $20 per gallon of gasoline in this market. What is the deadweight loss arising from the implementation of this price ceiling?

a. $3,000
b. $4,000
c. $5,000
d. $6,000



$4P = 200 - P$
$5P = 200$
$P = 40$

$DWL = \frac{1}{2}(120-20)(160-80)$
$= \frac{1}{2}(100)(80)$

SOME WORK

30) The value of consumer surplus after implementing this price ceiling is _____. Of the original producer surplus, after the implementation of the price ceiling, ____ .

a. $3,200; $1,600 is lost to deadweight loss
b. $14,400; $2,800 is lost to deadweight loss or "captured" by consumers
c. $3,200; the new producer surplus is now $800
d. $1,600 less than the initial value of consumer surplus; $1,600 is "captured" by consumers

with price ceiling CS $= \frac{1}{2}(200-120)(80) + 100(80)$
$= 3200 + 8000 = 11,200$

CS initially $= \frac{1}{2}(160)(160) = 80(160) = 12800$
$- 11200$
Δ in CS $\rightarrow$ 1,600
$\downarrow$ of 1600

NOT SO BAD

31) The government wants to understand how the implementation of this price ceiling impacts the total surplus in the market. What is the net change in total surplus (that is, what is the difference between the TS without the price ceiling minus the TS with the price ceiling) after the implementation of this government policy?

a. TS decreases by $4,000
b. TS increases by $4,000
c. TS decreases by $8,000
d. TS increases by $8,000

TS before price ceiling $= \frac{1}{2}(200)(160)$
$= 100(160) = \$16000$

TS with price ceiling
$= CS_{w/\text{price ceiling}} + PS_{w/\text{price ceiling}}$
$= 11,200 + \frac{1}{2}(20)(80)$
$= 11,200 + 800 = \$12,000$

TS $\downarrow$ by $\$4,000$

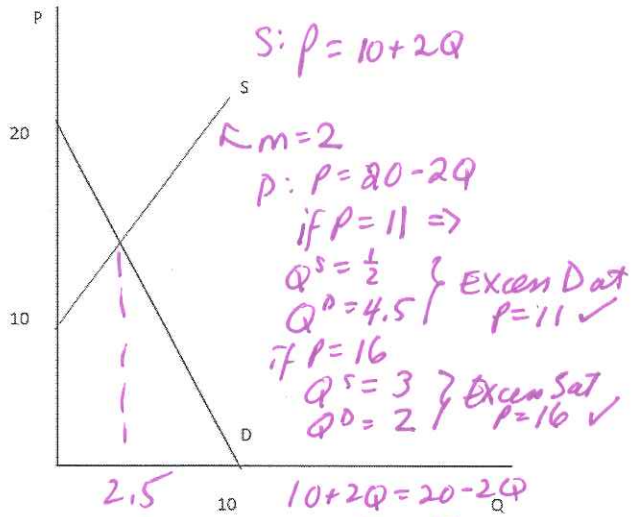
or DWL $= \frac{1}{2}(120-20)(160-80)$
$= \frac{1}{2}(100)(80) = 4000$

DWL is loss of TS w/price ceiling

32) One of the graphs below shows the market demand and supply curves for yogurt. All supply curves in the graphs below have a slope of two. Given the information in the box, which graph would correctly specify the yogurt demand and supply curves?

- At P = 11, there is an excess demand for yogurt.
- At P = 16, there is an excess supply of yogurt.
- The equilibrium quantity is above 3.

a. X



S: $P = 10 + 2Q$

$m = 2$

D: $P = 20 - 2Q$

if $P = 11 \Rightarrow$

$Q^S = \frac{1}{2}$ } Excess D at $P = 11$ ✓

$Q^D = 4.5$

if $P = 16$

$Q^S = 3$ } Excess S at $P = 16$ ✓

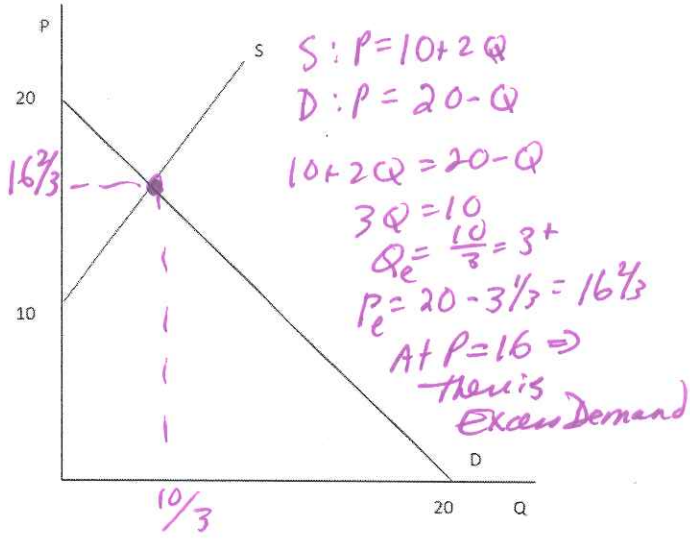
$Q^D = 2$

$10 + 2Q = 20 - 2Q$

$4Q = 10$

$Q = 2.5$

b. X



S: $P = 10 + 2Q$

D: $P = 20 - Q$

$10 + 2Q = 20 - Q$

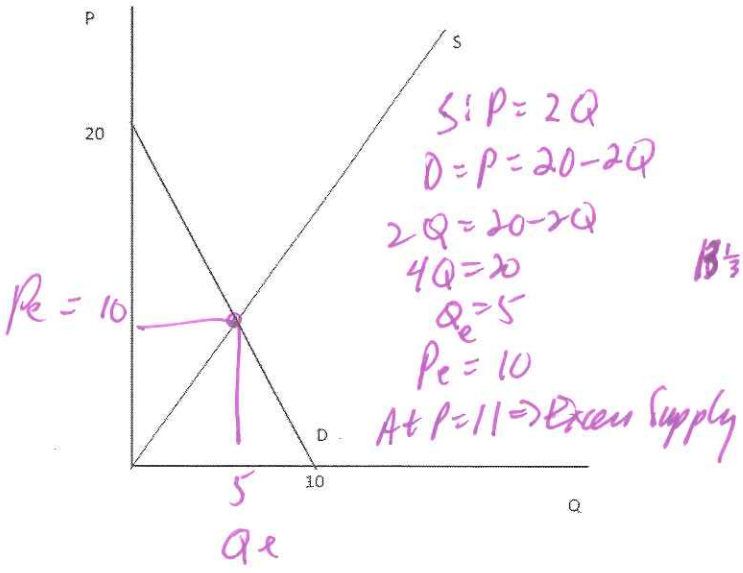
$3Q = 10$

$Q_e = \frac{10}{3} = 3\frac{1}{3}$

$P_e = 20 - 3\frac{1}{3} = 16\frac{2}{3}$

At $P = 16 \Rightarrow$ there is Excess Demand

c. X



S: $P = 2Q$

D: $P = 20 - 2Q$

$2Q = 20 - 2Q$

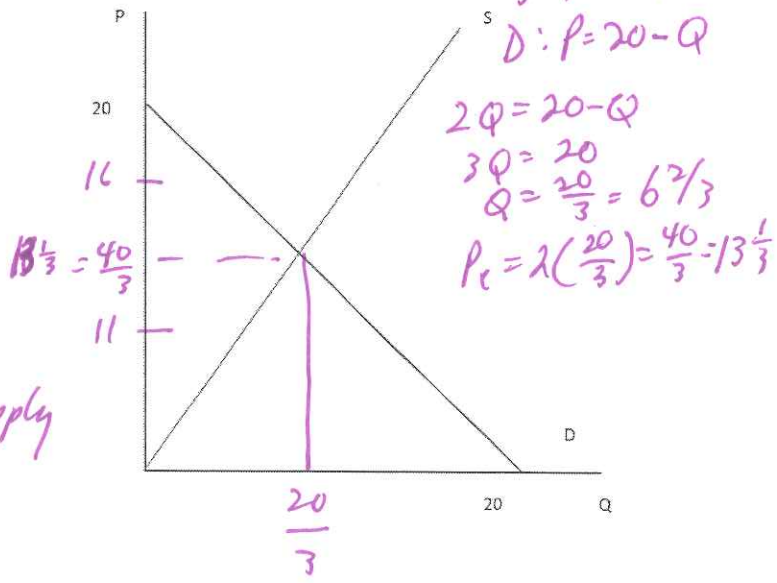
$4Q = 20$

$Q_e = 5$

$P_e = 10$

At $P = 11 \Rightarrow$ Excess Supply

d.



S: $P = 2Q$

D: $P = 20 - Q$

$2Q = 20 - Q$

$3Q = 20$

$Q = \frac{20}{3} = 6\frac{2}{3}$

$P_e = 2\left(\frac{20}{3}\right) = \frac{40}{3} = 13\frac{1}{3}$

END OF EXAM

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