

Economics 101
Fall 2018
October 16, 2018
First Midterm

Name ANNOTATED KEY
TA Name _____
Discussion Section # _____
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 9 binary choice questions worth 2 points each and 20 multiple choice questions worth 4 points each. 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. Writing all this information correctly is worth 2 points. Answer all questions on the scantron sheet with a #2 pencil. There are 14 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. The discussion numbers can be found at the bottom of this page.
 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.

Laura Boisten	Yulia Dudareva	Erlan Konebayev	Hoyoung Yoo	Wentao Zhou
<u>301</u> Thurs 3:30 PM Social Sciences 6314	<u>307</u> Fri 11:00 AM Van Vleck B139	<u>304</u> Fri 12:05 PM Van Hise 475	<u>303</u> Fri 1:20 PM Van Vleck B235	<u>302</u> Fri 2:25 PM Sterling 2323
<u>306</u> Thurs 4:35 PM Social Sciences 6322	<u>311</u> Fri 9:55 AM Van Hise 474	<u>308</u> Fri 8:50 AM Sterling 2333	<u>305</u> Fri 12:05 AM Van Hise 395	<u>313</u> Fri 8:50 AM Van Vleck B219
<u>312</u> Fri 9:55 AM Van Hise 590		<u>309</u> Fri 11:00 AM Van Vleck B135	<u>310</u> Fri 11:00 AM Van Vleck B123	<u>313</u> Fri 1:20 PM Ingraham 120

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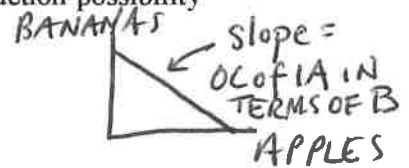
I, _____, agree to neither give nor receive any help on this exam from others. I understand that the use of a calculator or communication device on this exam is academic misconduct. I also understand that providing answers to questions on this exam to other students is academic misconduct, as is taking 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 _____

Binary Choice (9 Questions @ 2 Points Each for a Total of 18 Points)

EASY:
DEFINITION

1. Suppose there is a village that produces apples and bananas. Assume that this village has a linear production possibility frontier in the production of these two goods. If the x-axis (horizontal axis) represents the quantity of apples and the y-axis (vertical axis) represents the number of bananas, what does the slope of this production possibility frontier signify?



- a. The opportunity cost of producing one apple in terms of bananas.
- b. The opportunity cost of producing one banana in terms of apples.

DEFINITION

2. Consider the following statement:

“Disneyworld is nothing more than seeing people in costumes resembling movie characters”.

FALLACY OF COMPOSITION
→ WHAT WORKS FOR ONE, DOES NOT WORK FOR MANY

- a. This statement illustrates the Fallacy of Composition.
- b. This statement is not an illustration of the Fallacy of Composition.

3. When the price of an input that is used in the production of some good falls,

EX. IN CLASS:

- a. The supply curve for this good shifts to the right.
- b. There is a movement upward along the supply curve.

- 1) PACKING UP EARLY
- 2) STANDING UP AT THE FOOTBALL GAME
- 3) SPENDING LESS IN A RECESSION

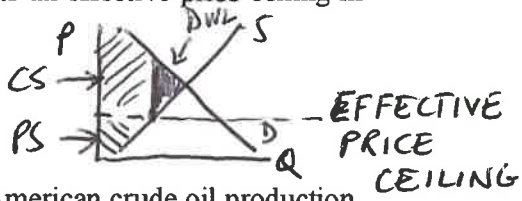
EASY

* JUST BECAUSE YOU SEE MICKEY MOUSE, DOESN'T MEAN EVERYONE IS A DISNEY CHARACTER

EASY

4. Consider a market with an upward sloping supply curve and a downward sloping demand curve. Suppose that the government implements an effective price ceiling in this market. This effective price ceiling will:

- a. Cause some deadweight loss.
- b. Result in an excess supply of the good.



CONCEPT IS NOT HARD BUT FINAL REASONING (TO AVOID MATH) IS TOUGH!

5. The following chart provides a historical summary of American crude oil production. According to the graph, between which two of the following years do we observe a larger percentage increase in US crude oil production?



- a. Between 2011 and 2013
- b. Between 2012 and 2014

$$\% \Delta 2011 \text{ to } 2013 = \left(100\% \left(\frac{7000 - 5500}{5500}\right)\right) = \left(\frac{1500}{5500}\right) (100\%)$$

$$\% \Delta 2012 \text{ to } 2014 = \left(100\% \left(\frac{8000 - 6200}{6200}\right)\right) = \frac{18}{62} (100\%)$$

NOT HARD

6. Suppose that the cost-benefit analysis of Marion attending four years of college yields the results that are given in the table below. Will it be beneficial for this student to attend all four years of college?

Year	Total increase in future salary from attending this year of college	Cost of attending college for this additional year of college
1	\$30,000	\$20,000
2	\$20,000	\$20,000
3	\$15,000	\$20,000
4	\$10,000	\$20,000

- a. Yes
- b. No

$\frac{3}{11}$ vs $\frac{1}{3}$
WHICH IS BIGGER #? HARD \Rightarrow SO GO BACK
 $\% \Delta 2012 \text{ to } 2014 = 15 < \frac{(100\%)(8000 - 6000)}{6000}$
 $< \frac{20}{60} = \frac{1}{3}$ or 33%
So $\% \Delta 2011 \text{ to } 2013 = 15 > \% \Delta 2012 \text{ to } 2014$

EASY:
EXPLICIT →
EXAMPLE
COVERED IN
LECTURE

7. According to the Paradox of Thrift, if people increase their individual savings,
- a. This activity may hurt the general population.
 - b. This activity may benefit the general population.
8. The usage of a cellphone during class often distracts other students. Assume this distraction leads to these students learning less than they otherwise would. This is an example of:
- a. A negative externality or an external cost.
 - b. A positive externality or an external benefit.
9. The opportunity cost of an action is equal to:
- a. The possible gains from acting upon the second-best action.
 - b. The potential benefits gained from all the possible alternatives to that action.

EASY:
CONCEPT
COVERED
IN CLASS

EASY
O.C. IS
THE FOREGONE
PRODUCTION
OR
CONSUMPTION

YOU WOULD HAVE DONE ⇒ NOT THE SUM OF ALL POSSIBILITIES

Multiple Choice (20 Questions @ 4 Points Each for a Total of 80 Points)

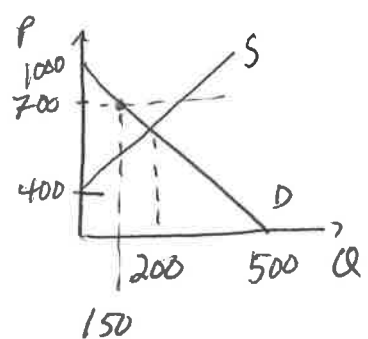
SOME
WORK:
NOT HARD

10. Suppose there exists a market for flat-screen TVs. The supply and the demand curves in this market are given by the following equations where P is the price per flat-screen TV measured in dollars and Q is the quantity of flat-screen TVs:

Demand Curve: $P = 1000 - 2Q$
Supply Curve: $P = Q + 400$

Suppose the government implements a price floor of \$700 per flat-screen TV into this market. Given this information and holding everything else constant, what is the reduction in the number of flat-screen TVs sold relative to the initial equilibrium quantity in this market? There is a reduction of

- a. 50 flat-screen TVs sold due to the imposition of this price floor.
- b. 100 flat-screen TVs sold due to the imposition of this price floor.
- c. 200 flat-screen TVs sold due to the imposition of this price floor.
- d. 600 flat-screen TVs sold due to the imposition of this price floor.



$$1000 - 2Q = Q + 400$$

$$600 = 3Q$$

$$200 = Q \text{ INITIALLY}$$

IF $P = 700$

$$\Rightarrow D: 700 = 1000 - 2Q^D$$

$$2Q^D = 300$$

$$Q^D = 150$$

$Q^D \text{ WITH PRICE FLOOR} = 150$

$\Delta \text{ IN } Q = Q \text{ INITIALLY} - Q^D \text{ W/ PRICE FLOOR} = 200 - 150 = 50$

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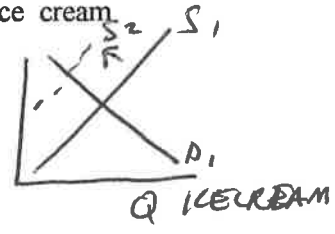
EASY:
STRAIGHT
FROM CLASS
LECTURE

11. In class we discussed the health insurance death spiral. If this spiral occurs, which of the following statements will NOT happen?
- a. Healthier people will continue to drop their health insurance coverage. *WILL HAPPEN*
 - b. The health insurance death spiral continues until it reaches a point where the health insurance market simply collapses. *WILL HAPPEN*
 - c. Health insurance premiums increase even more over time. *WILL HAPPEN*
 - d. The exodus of healthy people from the health insurance pool results in a lower risk insured pool. *NO ⇒ AS HEALTHY PEOPLE EXIT THE POOL, THE INSURED POOL IS A HIGHER RISK INSURED POOL ⇒ MORE LIKELY TO NEED HEALTH CARE*
12. Consider the market for ice cream that is initially in equilibrium. Now, the farmers announce that the price of milk is rising. Milk is an input in the production of ice cream. Given this information and holding everything else constant, what happens to the supply curve for ice cream?

EASY

- a. The supply curve for ice cream does not change: there is simply a movement along the supply curve resulting in an increase in the quantity of ice cream supplied.
- b. The supply curve for ice cream does not change: there is simply a movement along the supply curve resulting in a decrease in the quantity of ice cream supplied.
- c. The supply curve for ice cream shifts to the right.
- d. The supply curve for ice cream shifts to the left.

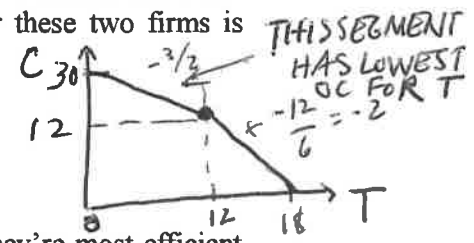
$P_{MILK} \uparrow$



Use the following information to answer the next two (2) questions.

Assume there are only two firms in the automobile market: General Motors and Ford. Both firms produce cars (c) and trucks (t). The joint PPF for these two firms is described by the following equations:

$$c = \begin{cases} 30 - \frac{3}{2}t & \text{if } 0 \leq t \leq 12 \\ 36 - 2t & \text{if } 12 \leq t \leq 18 \end{cases}$$



NOT TOO BAD
IF YOU CAN
VISUALIZE
WHAT YOU
ARE
LOOKING FOR

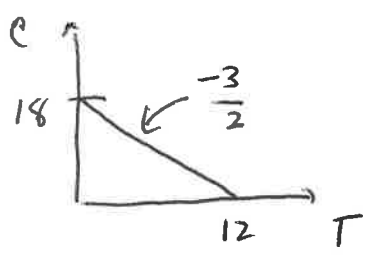
13. Suppose both firms specialize and manufacture only the good they're most efficient at producing. Find the number of trucks and cars (t, c) produced.
- a. (t, c) = (30, 36)
 - b. (t, c) = (12, 12)
 - c. (t, c) = (12, 18)
 - d. (t, c) = (16, 18)

IF $T=12 \Rightarrow$
 $C = 30 - \frac{3}{2}(12)$
 $C = 30 - 18 = 12$
 $(T, C) = (12, 12)$
 LOOKING FOR COORDINATES FOR THE "KINK POINT"

NOT TOO
HARD

14. Find the equation for the PPF of the firm with the lowest opportunity cost in producing trucks.

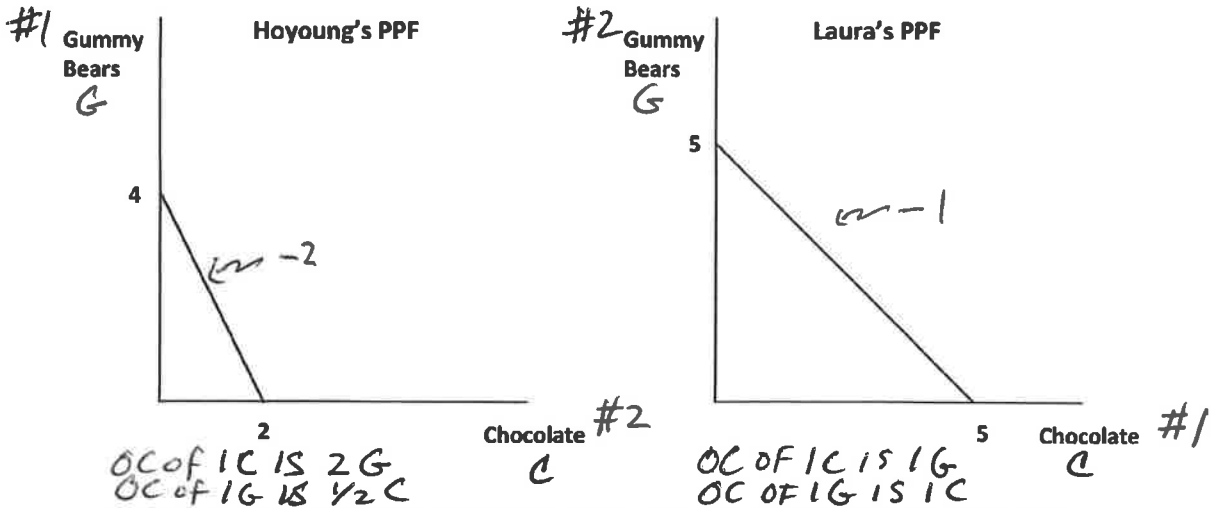
- a. $c = 30 - \frac{3}{2}t$
- b. $c = 36 - 2t$
- c. $c = 18 - \frac{3}{2}t$
- d. $c = 12 - 2t$



$$C = 18 - \left(\frac{3}{2}\right)T$$

Use the following information to answer the next three (3) questions.

These PPF's represent possible combinations of gummy bears and chocolate that Hoyoung and Laura can individually produce in 1 hour. Assume that they both have linear production possibility frontiers. Furthermore, assume that gummy bears are measured in bags of gummy bears and chocolate is measured in bars of chocolate.



EASY

15. What is the opportunity cost of producing one bar of chocolate for Hoyoung?

- a. $\frac{1}{2}$ bags of gummy bears
- b. 2 bags of gummy bears
- c. 4 bags of gummy bears
- d. 6 bags of gummy bears

NOT HARD

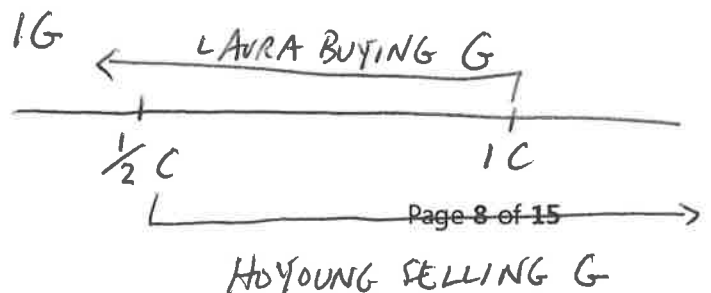
16. Who has the comparative advantage in producing gummy bears and who has the absolute advantage in producing gummy bears?

- a. Laura has the absolute advantage in producing gummy bears ✓ but Hoyoung has the comparative advantage in producing gummy bears. ✓
- b. Laura has the absolute advantage and comparative advantage in producing gummy bears.
- c. Hoyoung has the absolute advantage in producing gummy bears ~~X~~ but Laura has the comparative advantage in producing gummy bears.
- d. Hoyoung has the absolute advantage ~~X~~ and comparative advantage in producing gummy bears.

EASY

17. Which of the following is an acceptable range of trading prices for one bag of gummy bears in terms of bars of chocolate? The acceptable trading range of one bag of gummy bears is between:

- a. 1 and 5 bars of chocolate.
- b. 1 and 2 bars of chocolate.
- c. $\frac{1}{2}$ and 2 bars of chocolate.
- d. $\frac{1}{2}$ and 1 bar of chocolate.



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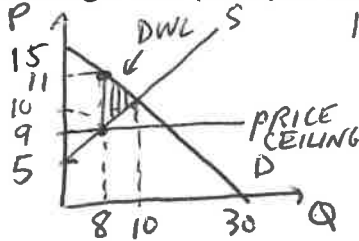
SOME WORK

18. In the toy market, demand and supply are represented by the following equations where P is the price per toy measured in dollars and Q is the quantity of toys:

Demand Curve: $Q = 30 - 2P$
 Supply Curve: $Q = 2P - 10$

$30 - 2P = 2P - 10$
 $40 = 4P$
 $10 = P$
 $Q = 10$

Suppose the government decides to intervene in the market for toys by implementing a price ceiling of \$9 per toy. Given this information and holding everything else constant, what is the deadweight loss (DWL) in the toy market from implementing this price ceiling?

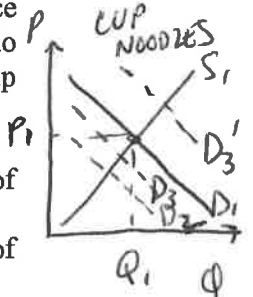


IF $P = 9 \Rightarrow Q^S = 2(9) - 10 = 8$
 IF $Q = 8 \Rightarrow P_{\text{CONSUMERS WILLING TO PAY}} \Rightarrow$
 $Q^D = 30 - 2P \rightarrow 2P = 22$
 $8 = 30 - 2P \rightarrow P = 11$
 $DWL = \frac{1}{2}(11 - 9)(10 - 8) = \2

- a. $DWL = \$2$
- b. $DWL = \$32$
- c. $DWL = \$16$
- d. $DWL = \$4$

CHALLENGING

19. Assume that Cup noodles are an inferior good. Furthermore, assume that eggs and noodles are complements. Suppose in 2018 that consumer incomes rise, and the price of eggs decline. Given this information and holding everything else constant, what do you predict will happen to the equilibrium price and equilibrium quantity of Cup noodles? Assume that the supply of Cup noodles is unchanged.



- a. The equilibrium price of Cup noodles decreases while the equilibrium quantity of Cup noodles is indeterminate. X
- b. The equilibrium price of Cup noodles decreases, and the equilibrium quantity of Cup noodles decreases. X
- c. The equilibrium price of Cup noodles increases, and the equilibrium quantity of Cup noodles increases. X
- d. Both the equilibrium price of Cup noodles and the equilibrium quantity of Cup noodles is indeterminate given this information.

← CAN'T CONCLUDE THIS
 ← CAN'T CONCLUDE THIS
 ← CAN'T CONCLUDE THIS

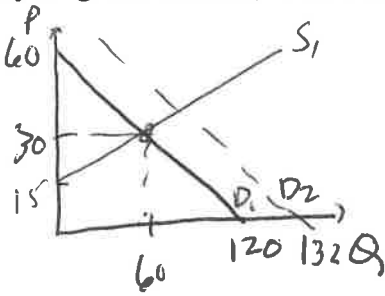
D_1 to D_2 : ↑
 IN INCOME
 $P_{\text{EGGS}} \downarrow \Rightarrow Q_{\text{EGGS}}^D \uparrow$
 $\therefore D$ FOR CUP NOODLES ↑
 $\Rightarrow D_3$ OR D_3'
 POSSIBLE
 $P?$, $Q?$ IN MKT FOR CUP NOODLES

NOT TOO BAD

20. Suppose the market for widgets in is initially characterized by the following demand and supply equations where Q is the quantity of widgets and P is the price per widget in dollars.

Demand Curve: $Q = 120 - 2P$
 Supply Curve: $Q = 4P - 60$

Suppose demand increases by 12 units at every given price. Given this information and holding everything else constant, what is the new equilibrium price in the market for widgets?



$120 - 2P = 4P - 60$
 $180 = 6P$
 $30 = P \Rightarrow W/D$ SHIFT, $P > 30$
 $Q = 120 - 2(30) = 60$
 NEW DEMAND:
 $Q' = 132 - 2P'$

- a. \$21
- b. \$25
- c. \$32
- d. \$47

$4P' - 60 = 132 - 2P'$
 $6P' = 192$
 $P' = 32$

Use the following information to answer the next three (3) questions.

Consider the market for corn that is described by the following equations where P is the price in dollars per unit of corn and Q is the quantity of units of corn:

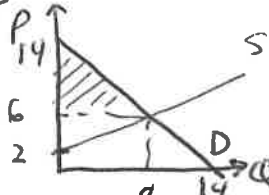
Supply Curve: $Q = 2P - 4$
 Demand Curve: $Q = 14 - P$

EASY

21. Given the above information and holding everything else constant, what is the value of consumer surplus (CS) when the corn market is in equilibrium?

- a. CS = \$18
 b. CS = \$16
 c. CS = \$32
 d. CS = \$30

$2P - 4 = 14 - P$
 $3P = 18$
 $P = 6$
 $Q = 8$



$CS = \frac{1}{2} (14 - 6)(8) = \32

EASY

22. The government decides to raise corn prices by implementing a price support program. The government sets the price floor at \$8 per unit of corn and commits to buying any surplus corn in the market given this price floor. Given this program and holding everything else constant, how much corn does the government buy?

- a. The government buys 6 units of corn.
 b. The government buys 4 units of corn.
 c. The government buys 12 units of corn.
 d. The government buys 2 units of corn.

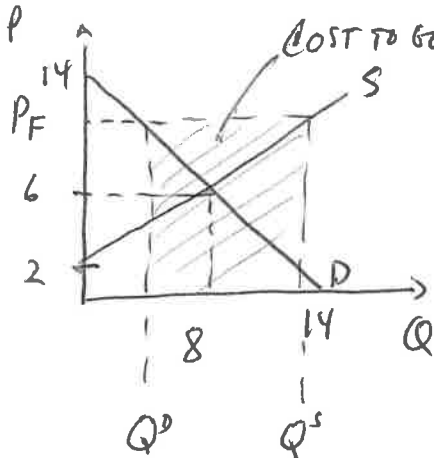
IF $P = 8 \Rightarrow Q^S = 2(8) - 4 = 12$
 $Q^D = 14 - 8 = 6$

$Q^S - Q^D = \text{SURPLUS GOVT BUYS}$
 $12 - 6 = 6$

NOT HARD:
 SOME
 WORK

23. Instead of the price support program described in the previous question, the government decides to implement a different price support program. The total cost to the government of this new price support program is \$120. The government commits to buy any leftover corn. Given this program, what price per unit of corn does the government set when it implements this price floor program?

- a. Government sets the price at \$12 per unit of corn. X
 b. Government sets the price at \$9 per unit of corn.
 c. Government sets the price at \$10 per unit of corn.
 d. Government sets the price at \$11 per unit of corn.



IF $P_F = \$12 \Rightarrow Q^S = 2(12) - 4 = 20$
 $Q^D = 14 - 12 = 2$

$\text{COST TO GOVT} = 12(18) \neq 120$ X

IF $P_F = 10 \Rightarrow Q^S = 2(10) - 4 = 16$
 $Q^D = 14 - 10 = 4$

$\text{COST TO GOVT} = 12(10) = 120$ ✓

IF $P_F = 9 \Rightarrow Q^S = 2(9) - 4 = 14$
 $Q^D = 14 - 9 = 5$

$\text{COST TO GOVT} = 9(9) = 81$ X

IF $P_F = 11 \Rightarrow Q^S = 2(11) - 4 = 18$
 $Q^D = 14 - 11 = 3$

$\text{COST TO GOVT} = 11(15) \neq 120$ X

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$$P = \frac{1}{6}Q - \frac{28}{6} \text{ OR}$$

$$\frac{1}{6}Q = P + \frac{28}{6}$$

$$Q = 6P + 28$$

$$y = mx + b$$

$$P = \frac{1}{6}Q + b$$

$$4 = \frac{1}{6}(52) + b$$

$$24 = 52 + 6b$$

$$6b = -28$$

$$b = -28/6$$

Use the following information to answer the next three (3) questions.

Consider the beer production in Madison. You are told that there are three beer producers in Madison: Firm A, Firm B, and Firm C. Furthermore, you are given the following information: at a price of \$4/bottle, Firm A is willing to produce 12 bottles of beer, Firm B is willing to produce 20 bottles of beer, and Firm C is willing to produce 20 bottles of beer. At a price of \$5/bottle, Firm A is willing to produce 14 bottles of beers, Firm B is willing to produce 22 bottles of beer, and Firm C is willing to produce 22 bottles of beer. Assume that the supply of beer is linear between the prices of \$4/bottle and \$5/bottle. In this set of questions Q is the quantity of bottles of beer and P is the price in dollars per bottle of beer.

LOOK AT "EASIEST" EQUATIONS FIRST \Rightarrow SO (B) \Rightarrow IS IT TRUE FOR $P=4$ AND $P=5$? YES! STOP THERE!!

THIS IS EITHER EASY (SEE NOTE) OR HARDER DEPENDING UPON YOUR APPROACH - I GAVE BOTH IN MY ANSWER

24. Given the above information and holding everything else constant, what is the beer supply curve in Madison?

- a. $Q = \frac{1}{6}P + 20$
- b. $Q = 6P + 28$**
- c. $P = \frac{1}{6}Q - 3$
- d. $P = 6Q - 12$

AT \$4/BOTTLE

FIRMA: $Q_A^S = 12$

FIRMB: $Q_B^S = 20$

FIRMC: $Q_C^S = 20$

52

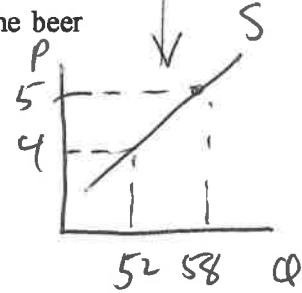
AT \$5/BOTTLE

FIRMA: $Q_A^S = 14$

FIRMB: $Q_B^S = 22$

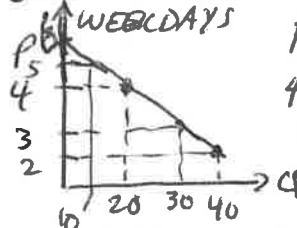
FIRMC: $Q_C^S = 22$

58



25. In this same market consider the demand for beer in Madison. Suppose on weekdays, beer consumers in Madison want 20 bottles of beer at a price of \$4/bottle and 30 bottles of beer at a price of \$3/bottle. However, beer consumers change their preferences for beer on the weekend. On the weekend they would like to drink 8 more bottles of beer at a price of \$5/bottle and 20 more bottles of beer at a price of \$2 than they wanted at these prices on weekdays. Assume that both the market demand curve for beer on weekdays and the market demand curve for beer on weekends are linear. Which of the following equations expresses the market demand curve for beer in Madison on the weekend given this information?

- a. $Q = 60 - 10P$
- b. $Q = 60 - \frac{1}{10}P$
- c. $Q = 88 - 14P$**
- d. $Q = 80 - 12P$



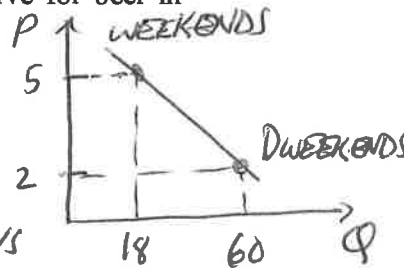
$P = -\frac{1}{10}Q + b$

$4 = -\frac{1}{10}(20) + b$

$6 = b$

$P = 6 - \frac{1}{10}Q$

ON WEEKDAYS



HARD \Rightarrow A LOT TO FIGURE OUT \Rightarrow I GAVE 2 METHODS

EASY, PROVIDED YOU GOT # 24 AND # 25

26. Based on above information and holding everything else constant, what would be the weekend equilibrium price of beer and the equilibrium quantity of beer in Madison?

- a. Price: \$5/bottle; quantity: 42 bottles
- b. Price: \$4/bottle; quantity: 44 bottles
- c. Price: \$3/bottle; quantity: 46 bottles**
- d. Price: \$2/bottle; quantity: 48 bottles

ON WEEKDAYS IF $P = 5 \Rightarrow Q^D = 10$

IF $P = 2 \Rightarrow Q^D = 40$

① DEMAND ON WEEKENDS:

$P = -\frac{3}{42}Q + b$

$5 = -\frac{3}{42}(18) + b$

$5 = -\frac{3}{7}(3) + b$

$35 = -9 + 7b$

$44 = 7b$

$b = \frac{44}{7}$

$P = -\frac{1}{14}Q + \frac{44}{7}$

or $\frac{1}{14}Q = \frac{44}{7} - P$

$Q = 88 - 14P$

WEEKEND D: $Q = 88 - 14P$

S: $Q = 6P + 28$

$88 - 14P = 6P + 28$

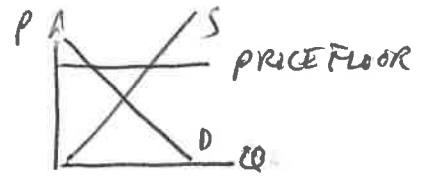
$60 = 20P$

$3 = P$

$Q = 6(3) + 28 = 18 + 28 = 46$

② YOU KNOW $(Q, P) = (18, 5)$ AND $(60, 2) \Rightarrow$ LOOK AT "EASIEST" EQUATIONS IN ANSWERS FIRST \Rightarrow (C) !!

NOT TOO HARD



27. Consider the market for cookies to be in equilibrium. Suppose the government imposes a binding price floor in this market. Given this information and holding everything else constant, what happens to the supply curve in this market?

- (a) This scenario does not change the original supply curve for cookies: this is simply a movement up the supply curve, representing an increase in the quantity of cookies supplied.
- b. This scenario does not change the original supply curve for cookies: this is simply a movement down the supply curve, representing a decrease in the quantity of cookies supplied.
- c. The supply curve for cookies will shift to the right given this scenario: representing an increase in the supply of cookies. ✗
- d. The supply curve for cookies will shift to the left given this scenario: representing a decrease in the supply of cookies. ✗

Use the following information to answer the next two (2) questions.

Recent studies show the health benefits of eating apples. The government of Manzanita proposes a price guarantee program that supports farmers who grow apples. Under this program the apple growers will grow the amount of apples they are willing to supply given the guaranteed price and then they will sell this quantity to consumers for whatever per unit price the consumers are willing to pay for that quantity. The government will then pay the apple growers a subsidy per unit of apples such that the price per unit consumers pay plus the subsidy per unit the government pays is equal to the guaranteed price. The government has determined that the guaranteed price will be \$5 per kilo of apples. The market for apples is described by the following equations where P is the price of apples per kilo measured in dollars and Q is the quantity of apples in millions of kilos:

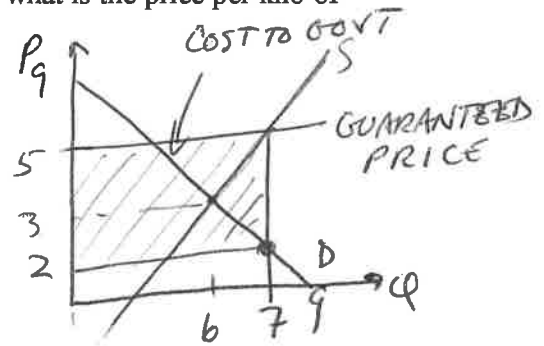
Demand Curve: $P = 9 - Q$
 Supply Curve: $P = 2Q - 9$

$9 - Q = 2Q - 9$
 $18 = 3Q$
 $6 = Q$

NOT HARD IF YOU UNDERSTAND THE PROGRAM

28. Given this program and holding everything else constant, what is the price per kilo of apples to consumers?

- a. The price per kilo of apples to consumers is \$5.
- b. The price per kilo of apples to consumers is \$4.
- c. The price per kilo of apples to consumers is \$3.
- (d) The price per kilo of apples to consumers is \$2.



NOT HARD

29. What is the cost to the government of this program?

- a. The cost to the government is \$35.
- (b) The cost to the government is \$21.
- c. The cost to the government is \$18.
- d. The cost to the government is \$14.

IF $P = \$5 \Rightarrow Q^S \Rightarrow 5 = 2Q^S - 9$
 $14 = 2Q^S$
 $7 = Q^S$

IF $Q = 7 \Rightarrow P_{\text{CONSUMERS WILLING TO PAY}} = 2$

$\text{COST TO GOVT} = (\$3/\text{UNIT})(7 \text{ UNITS})$
 $= \$21$

$P = 9 - 7 = 2$

(This page is intentionally left blank as an extra work sheet.)
DO NOT DETACH THIS SHEET FROM THIS EXAM BOOKLET!

END OF EXAM