Economics 101	Name _ANNOTATED KEY_
Spring 2016	TA Name _____
April 12, 2016	Discussion Section Number _____
Second Midterm	Student ID Number _____

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 9 binary response questions worth 2 points each and 20 multiple choice questions worth 4 points each for a total of 98 points. You will receive two points if you accurately and completely provide your name, ID number, discussion section number, version number, and TA name on the scantron sheet AND this exam booklet. Thus, the total number of points on the exam is 100. Answer all questions on the scantron sheet with a #2 pencil. There are 20 printed pages in this exam, including this cover sheet.

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 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. You can find the discussion numbers below on 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 on the top of this page.

- 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 proctors.

Discussion Sections (Sorted by TA):

Section Number	Time	Room	TA
DIS 301	R 4:35-5:25PM	5321 Sewell Social Sciences	Omar
DIS 307	F 9:55-10:45AM	B219 Van Vleck Hall	Omar
DIS 305	F 11:00-11:50AM	B219 Van Vleck Hall	Omar
DIS 302	F 2:25-3:15PM	4308 Sewell Social Sciences	Omar
DIS 311	F 8:50-9:40AM	120 Ingraham Hall	Wenqi
DIS 308	F 9:55-10:45AM	B341 Van Vleck Hall	Wenqi
DIS 309	F 11:00-11:50AM	B341 Van Vleck Hall	Wenqi
DIS 310	F 12:05-12:55PM	2323 Sterling Hall	Diwakar
DIS 304	F 2:25-3:15PM	6314 Sewell Social Sciences	Diwakar
DIS 306	F 3:30-4:20PM	4322 Sewell Social Sciences	Diwakar
DIS 313	R 3:30-4:20PM	6322 Sewell Social Sciences	Moheeb
DIS 303	R 4:35-5:25PM	6322 Sewell Social Sciences	Moheeb

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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 <u>at least</u> receiving a zero on this exam.

Signed _____

BINARY CHOICE QUESTIONS (9 QUESTIONS WORTH 2 POINTS EACH)

1. Suppose demand for glasses is very inelastic and the supply of glasses is relatively elastic. If the government imposes an excise tax on glasses, which of the following is most likely to occur?
   a. Consumers will bear a greater tax incidence than producers.
   b. Producers will bear a greater tax incidence than consumers.
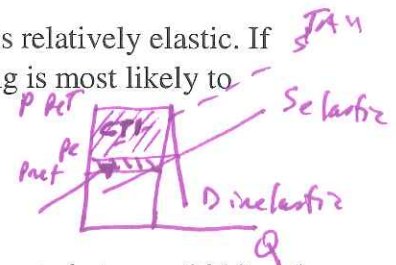
2. Suppose that the market basket costs $125 in 2010 and that the inflation rate between 2010 and 2015 was 20%. From this information we can conclude that the market basket costs _____ in 2015.
   a. 145
   b. 150
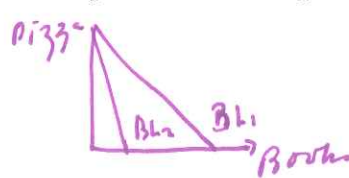
3. Kim consumes two goods, books and pizzas. If the price of books increases, while the price for pizzas stays constant, the slope of Kim's budget line will become: (put books on the x-axis and pizzas on the y-axis)
   a. Steeper.
   b. Flatter.

4. Assume that the marginal cost of producing Easter Bunnies is always increasing as the quantity of Easter Bunnies increases. You also know that currently the marginal cost of the current level of output is below the average total cost of producing this level of output and that this will still be true if the firm produces one more Easter Bunny. Given this information, what happens to average total cost when the firm decides to produce one more Easter Bunny? The average total cost will:
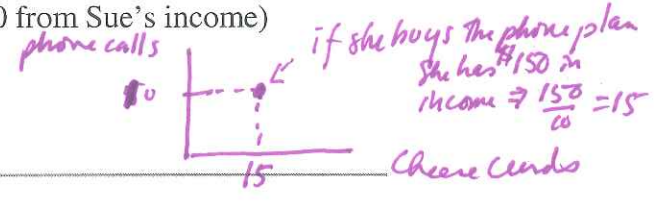   a. Increase.
   b. Decrease.
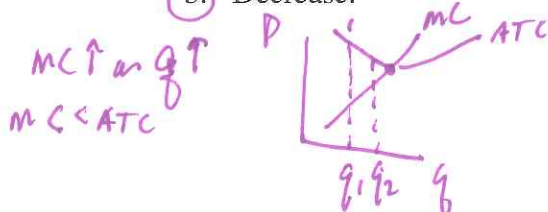
3

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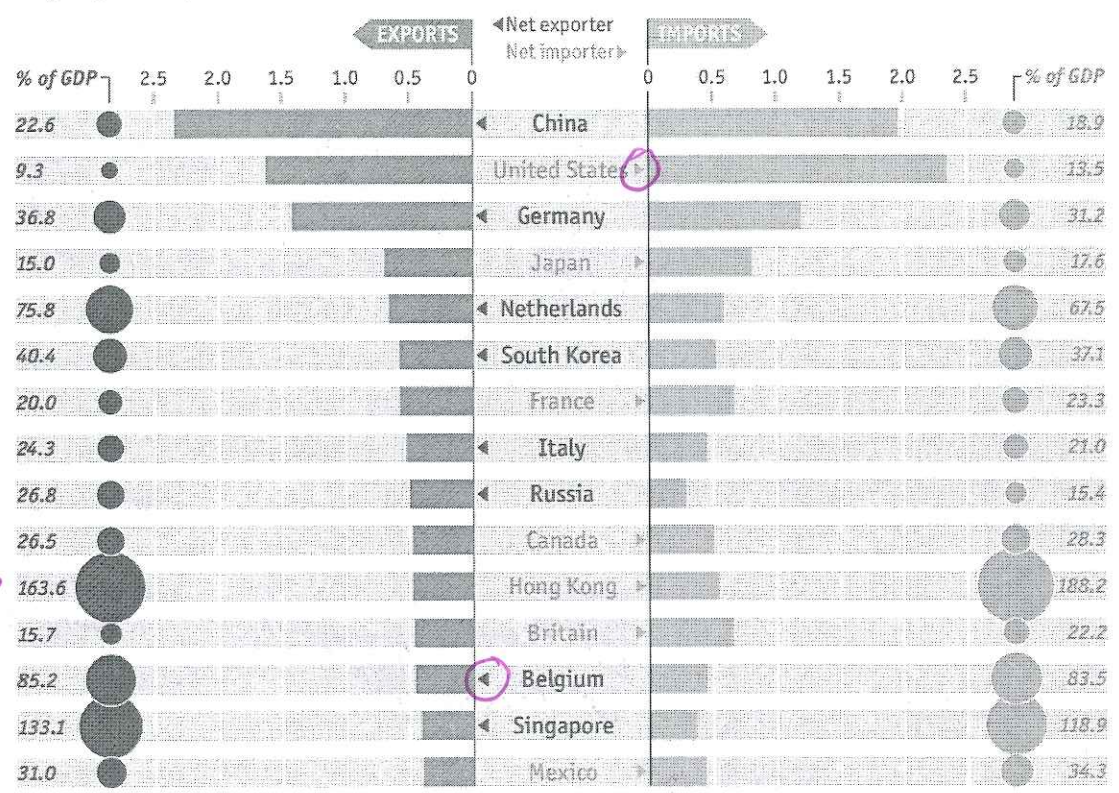*[handwritten left margin]* A BIT MORE CHALLENGING

5. Sue likes to eat cheese curds and make long-distance phone calls. Currently, she has no cell phone and must use a pay phone to make calls. Sue's income is $200. A dish of Cheese curds costs $10. Here is the information about the cell phone plan that Sue has. The cell phone service plan costs $50. For the $50, Sue gets 10 long-distance calls to start. After the first 10 long distance calls, Sue may pay for additional long-distance calls at a price of $1 per call. Given this information and holding everything else constant, what are the coordinates for the kink point in the budget line? (Hint: First, subtract $50 from Sue's income)

    a. 15 cheese curds, 10 phone calls
    b. 5 cheese curds, 150 phone calls

[handwritten right side] phone calls / if she buys the phone plan she has $150 in income ⇒ $\frac{150}{10}$ = 15 cheese curds

Trade flows
Largest global exporters, 2014, $trn

[handwritten left margin] Biggest circle →

Source: IMF
Economist.com

[handwritten left margin] NOT HARD

6. Based on the graph above, which of the following statements is **true**?
    a. The largest global exporter (as a percentage of GDP) is Hong Kong. *TRUE*
    b. The trade surplus (the difference between the level of exports and the level of imports) for the United States is greater than the trade surplus for Belgium. *FALSE*

[handwritten] US is running a trade deficit ⇒ a negative trade surplus
Belgium is running a trade surplus ⇒ a positive trade surplus

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

Dunia spends all her income on two goods X and Y. The price of each unit of X or of Y is $1, and it's known that Dunia is consuming 5 units of each good (which means, Dunia's initial income is $10). The income elasticity of good X is 2.

HARD

7. How many units of good Y would Dunia consume if you knew that Dunia's income increased by 10%?
    a. 5 units of good Y
    b. 5.5 units of good Y

HARD

8. Assume that the price of good X is still $1 and that Dunia's income is at its initial level of $10. Suppose you are told that Dunia decides to buy 10 units of good Y when the price of good Y drops to $0.50. Given this information and holding everything else constant, what is the cross price elasticity of good X for good Y?
    a. 0
    b. 0.5

$$Inc = 10 \atop Px = 1 \atop Py = 1 \Bigg\} \Rightarrow \begin{matrix} Inc = 10 \\ Px = 1 \\ Py' = .5 \end{matrix} \qquad \epsilon_{xy} = \frac{\% \Delta Q^0_x}{\% \Delta P_y} = \frac{0\%_0 z}{-50\%_0} = 0$$

$$5\cancel{5}X, 5\cancel{5}Y \qquad 5\eta X, 10\eta Y \rightarrow costs \ \#5$$

EASY

9. The government of Happyland wants to cancel the tariff on imported stuffed animals and replace it with an import quota of 4000 units. Holding everything else constant, if you know that Happyland was initially importing 5000 stuffed animals with the imposed tariff, what would happen if the government changes the policy and implements an import quota of 4000 units instead? The domestic producer surplus in this market will:
    a. Increase.
    b. Decrease.

$$7. \ Inc = 10 \atop Px = 1 \atop Py = 1 \Bigg\} \ 5\eta X, 5\eta Y$$

$$\epsilon_I = 2 = \frac{\% \Delta Q^0_x}{\% \Delta I}$$

$$\partial = \frac{\% \Delta Q^0_x}{10\%}$$

$$20\% = \% \Delta Q^0_x \Rightarrow \text{so } 20\% \text{ in } X \Rightarrow X \text{ initially} = 5 \rightarrow 20\% \uparrow \Rightarrow X' = 6$$

Income $\uparrow \eta \ 10\% \Rightarrow I' = \underline{11} \Rightarrow X' = 6$ So $Px X' = 6 \Rightarrow$ That means

she has $5 left to spend η good Y $\Rightarrow$ can afford 5 units η good Y
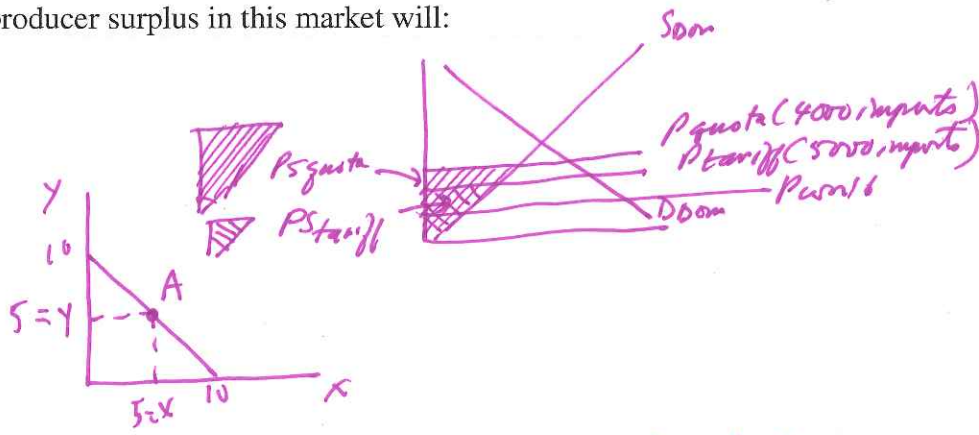
MULTIPLE CHOICE QUESTIONS (20 QUESTIONS WORTH 4 POINTS EACH)

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

Consider the market for pizza in Madison that can be described by the following market demand and market supply curves where P is the price per pizza and Q is the quantity of pizzas:

Market Demand: $P = 15 - (1/3)Q$
Market Supply: $P = (2/3)Q$

Due to a recent report linking pizza consumption to heart disease, the government decides to impose an excise tax of $6 per pizza to reduce the quantity of pizza eaten in Madison.

EASY:
PREDICTABLE

10. Given this information and holding everything else constant, what is the equilibrium price that consumers pay and the equilibrium quantity of pizza after the excise tax is imposed?
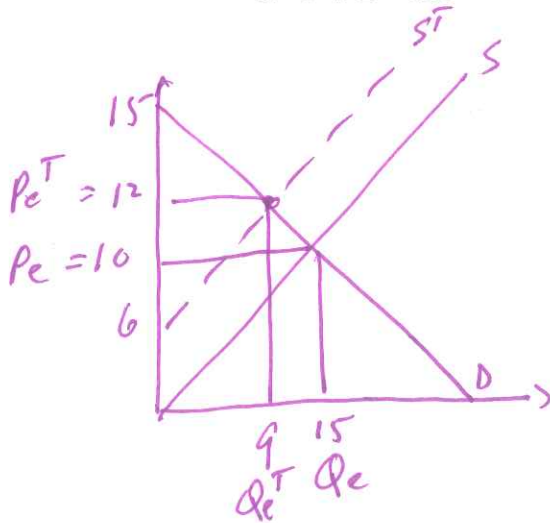 a. P* = 15 per pizza, Q* = 10 pizzas
 b. P* = 10 per pizza, Q* = 15 pizzas
 c. P* = 9 per pizza, Q* = 12 pizzas
 d. P* = 12 per pizza, Q* = 9 pizzas

EASY:
PREDICTABLE

11. What is the deadweight loss caused by the imposition of the excise tax?
 a. DWL = $9
 b. DWL = $12
 c. DWL = $18
 d. DWL = $36

Before tax:
$15 - \frac{1}{3}Q = \frac{2}{3}Q$
$15 = Qe$
$P_c = \frac{2}{3}(15) = 10$

With Tax:
$S^T: \ P = \frac{2}{3}Q_e^T + 6$
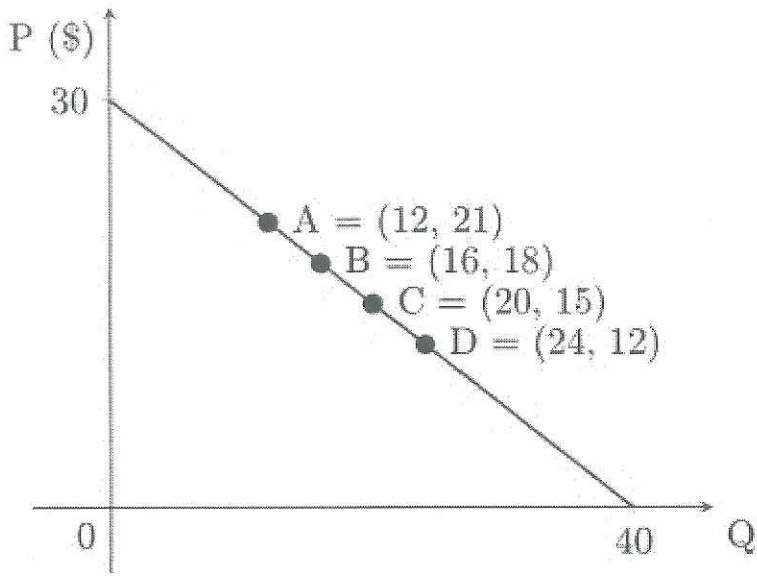$15 - \frac{1}{3} = \frac{2}{3}Q_e^T + 6$
$9 = Q_e^T$
$P_c^T = 15 - \frac{1}{3}(Q_e^T)$
$P_c^T = 15 - \frac{1}{3}(9) = 12$

$DWL = \frac{1}{2}(amt \ of \ tax \ per \ unit)(Q_e - Q_e^T)$
$= \frac{1}{2}(\$6/unit)(15 \ units - 9 \ units)$
$= (\$3)(6) = \$18$

7

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Demand for Basketball Tickets

P ($)

30

A = (12, 21)
B = (16, 18)
C = (20, 15)
D = (24, 12)

0   40   Q

12. Using the graph above, suppose the basketball team would like to maximize total revenues. At which point will revenue be maximized? ⟹ At the midpoint ⟹
    (20,15)
    a. Point A
    b. Point B
    c. Point C
    d. Point D

13. The demand for oranges in Wisconsin is given by the following equation where P is the price per unit of oranges and Q is the quantity of units of oranges:

$$Q = 100 - 0.25P$$

Consider two points on the demand curve for oranges in Wisconsin. At point A, the price for oranges is $100 per unit of oranges, and at point B the price for oranges is $300 per unit of oranges. Using the arc elasticity formula, calculate the price elasticity of demand for oranges from point A to point B.
    a. 0.33
    b. 1
    c. 1.5
    d. 3

At A: $P_1 = 100 \Rightarrow Q_1 = 75$

At B: $P_2 = 300 \Rightarrow Q_2 = 25$

$$Arc\ \epsilon_D = \left|\frac{\frac{Q_2 - Q_1}{Q_2 + Q_1}}{\frac{P_2 - P_1}{P_2 + P_1}}\right| = \left|\frac{\frac{25 - 75}{100}}{\frac{300 - 100}{400}}\right| = \left|\frac{\frac{-50}{100}}{\frac{200}{400}}\right| = \frac{\frac{1}{2}}{\frac{1}{2}}$$

$$= \frac{1}{2} \div \frac{1}{2} = \frac{1}{2} \times \frac{2}{1} = 1$$

9

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

The demand and supply for Fish and Chips in the Principality of Sealand is given by the following equations where P is the price per unit of fish and Q is the number of units of fish:

Demand: $Q = 20 - 0.5P$
Supply: $Q = 0.5P$

The price of Fish and Chips on the world market is $4 per unit of fish. Due to Sealand's small size, Sealand's activities have no impact on the world price of fish.

14. The prince of Sealand decides to impose an import quota on Fish and Chips. He plans to sell the import license at a price that maximizes the revenue he gets from the proposed import quota. Given this information and holding everything else constant, what should the import quota be?
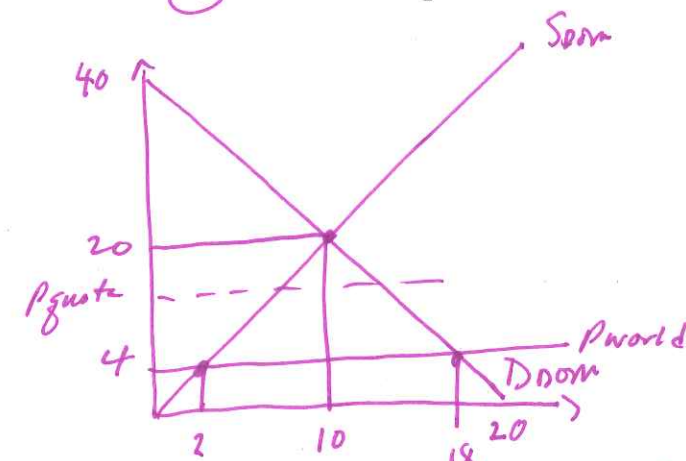
[handwritten: SOME DIFFICULTY: WORK REQUIRED]

    a. An import quota of 4 units will maximize the revenue from selling the import license. ✗
    b. An import quota of 6 units will maximize the revenue from selling the import license. ✗
    c. An import quota of 8 units will maximize the revenue from selling the import license.
    d. An import quota of 10 units will maximize the revenue from selling the import license. ✗

15. Due to complaints from the people of Sealand, the prince is forced to change the import quota of Fish and Chips, such that the new quota maximizes consumer surplus. What should the new quota level be in order to reach this goal? To maximize consumer surplus, the new import quota level should be set at:

[handwritten: EASY]

    a. 0 units of imported fish.
    b. 6 units of imported fish.
    c. 12 units of imported fish.
    d. 18 units of imported fish.

[handwritten notes: With no import quota => country imports 16 units => if set at 18, the import quota has no impact!]

[handwritten graph with axes showing 40, 20, Pquota, 4 on vertical axis; 2, 10, 18, 20 on horizontal axis; labels Sdom, Pworld, Ddom; Rev = (Pquota - Pworld)(Import Quota); Rev for import]

[handwritten work:
in closed economy:
$20 - \frac{1}{2}P = \frac{1}{2}P$
$20 = P$

14. In general we know
$Q^S_{dom} + \text{Import Quota} = Q^D_{dom}$
$\frac{1}{2}P + \text{Import Quota} = 20 - \frac{1}{2}P$
$\boxed{P + \text{Import Quota} = 20}$

So if Import quota = 4 => P + 4 = 20
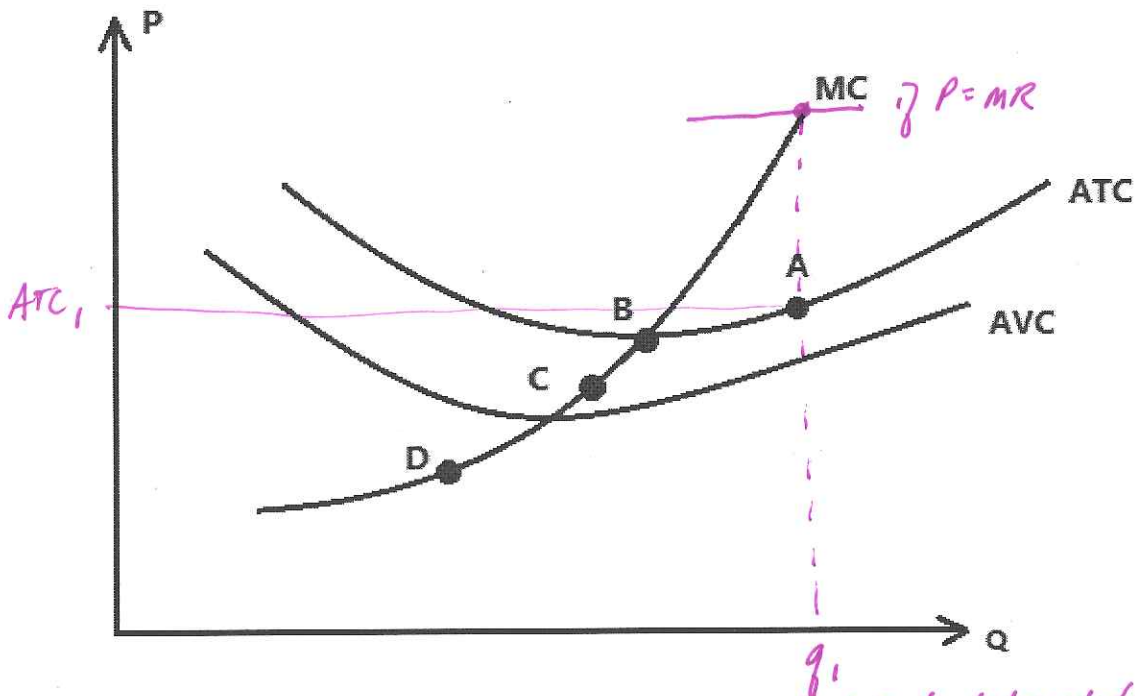$P = 16$
$Rev = (16-4)(4) = \$48$

if import quota = 6 => P + 6 = 20
$P = 14$
$Rev = (14-4)(6) = \$60$

if import quota = 8 => P + 8 = 20
$P = 12$
$Rev (12-4)(8) = \$64$

if import quota = 10 => P + 10 = 20
$P = 10$
$Rev (10-4)(10) = 60]$

10

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The following graph shows the cost curves for a manufacturing firm,

P

MC *⟩ P=MR*

ATC

ATC₁

A

B

AVC

C

D

q₁

Q

16. Which of the following statements is **incorrect**? *Looking for false statement*

NOT THAT HARD IF you UNDERSTAND CONCEPTS

   a. The firm will never operate at point A. *It is possible*
   b. The firm is making a positive economic profit at point B. *Econ π=0 ⟹ FALSE*
   c. The firm is incurring a loss at point C. *TRUE*
   d. In the short run, the firm will close down at point D. *TRUE*

17. Erzurum is a town with many tea shops. A group of economics students runs one of the shops, called Cayevi. The total and marginal cost curves for this tea shop are as given by the following equations where q is the quantity of units of tea sold by Cayevi:

$$TC = 0.2q^2 + 20$$
$$MC = 0.4q$$

NOT DIFFICULT

Given this information, at what price and quantity will average total cost equal marginal cost?

   a. $1 per unit of tea, 2.5 units of tea *✗*
   b. $2 per unit of tea, 5 units of tea *✗*
   c. $3 per unit of tea, 7.5 units of tea *✗*
   d. $4 per unit of tea, 10 units of tea *✓*

$$ATC = \frac{TC}{q} = \frac{0.2q^2 + 20}{q} = 0.2q + \frac{20}{q}$$

$$MC = ATC$$
$$0.4q = 0.2q + \frac{20}{q}$$
$$0.2q = \frac{20}{q}$$
$$0.2q^2 = 20$$
$$q^2 = 100$$
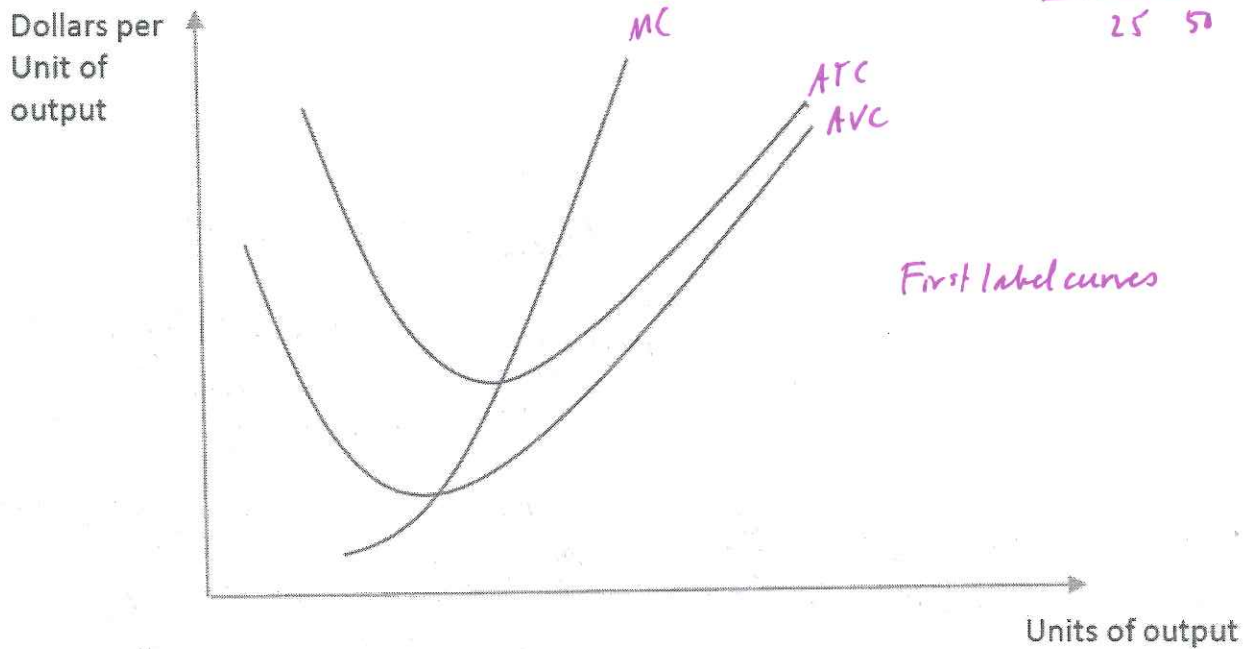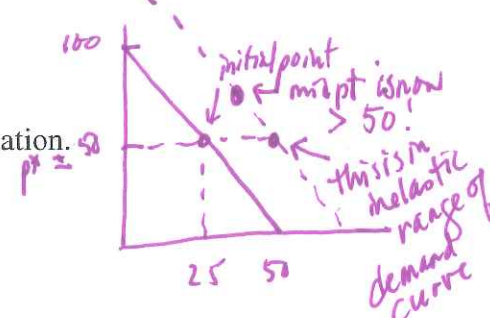
$$q = 10$$
$$MC = 0.4(10) = 4$$

12

18. Maruchan, the ramen noodle company, faces the following demand curve where P is the price per unit of ramen noodles and Q is the quantity of units of ramen noodles:

$$P = 100 - 2Q$$

Suppose the company pursues a pricing strategy that sets its price at that level where total revenue is maximized. We will refer to this price as P*.

Now, assume that the demand curve for Maruchan ramen shifts to the right at every price due to the increasing popularity of ramen noodles. Despite this demand shift, the company continues to sell its product for the same price. Given this information and holding everything else constant, what is the current point elasticity of demand for Maruchan ramen at P*?

 a. Elasticity > 1
 b. Elasticity = 1
 c. Elasticity < 1
 d. This question cannot be answered from the provided information.

[handwritten margin note:] FUN QUESTION: IF YOU "SEE IT", IT IS EASY

[handwritten:] 100   initial point   new pt is now > 50. this is in inelastic range of demand curve

[handwritten:] P =*   *[handwritten axis labels:] 25   50*

Dollars per Unit of output

[graph labels:] MC   ATC   AVC

[handwritten:] First label curves

Units of output

19. Based on the graph above of a firm's cost curves, which of the following statements is **true**?

[handwritten margin note:] NOT HARD

 a. The firm depicted in this graph has fixed costs. *[handwritten:] True AVC ≠ ATC ⇒ AFC exists*
 b. This firm's *[handwritten: average]* variable cost initially decreases as output increases and then it increases as output continues to increase. *[handwritten: X]*
 c. This firm's marginal cost is *[handwritten: increases]* constant as output increases. *[handwritten: X]*
 d. This firm's marginal cost is decreasing as output increases. *[handwritten: X]*
   [handwritten:] increasing

13

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

The market basket for the following economy is composed of 10 loaves of bread and 5 gallons of milk. Assume that base year is 2010 and a CPI is computed on a 100 point scale. Answer the following two questions based on the table below. (Note that you can fill the entire rows and columns by using what you are given in the question.)

Year	Nominal Price of Bread	Nominal Price of Milk	Nominal Cost of Market Basket	CPI BY 2010	Annual Inflation Rate
2010	$8	$4	100	100	-
2011	x=	$4	~~105~~ 105	105	5%
2012			$140	140	

20. What is the nominal price of bread in 2011?

  TEDIOUS

  a. $5.00
  b. $6.00
  c. $8.50
  d. $8.00

21. Given the above information and holding everything else constant, what is the approximate annual inflation rate for 2012?

  BEAUTIFUL NUMBERS

  a. 37%
  b. 33%
  c. 35%
  d. 40%

$$CPI_{2012} = \frac{140}{100}(100) = 140$$

$$\text{Annual Rate of Inflation } 2012 = \left[\frac{CPI_{2012} - CPI_{2011}}{CPI_{2011}}\right](100\%)$$

$$= \left(\frac{140 - 105}{105}\right)(100\%)$$

$$= \frac{35}{105}(100\%)$$

$$= \frac{7}{21}(100\%) = 33\%$$

Year | Cost of mkt basket

2010 $8(10) + 5(4) = 100$

2011 $x(10) + 5(4) = y$

2012

$$\frac{CPI}{}$$
$$\frac{100}{100}(100) = 100$$
$$\frac{y}{100}(100) = 105$$

$$x(10) + 5(4) = 105$$
$$10x + 20 = 105$$
$$10x = 85$$
$$x = 8.5$$

$$y = \frac{105(100)}{100 \times 1}$$
$$y = 105$$

14

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

22. Woody's utility function is given by the following equation:
$$U(x, y) = xy$$

This equation tells us that Woody's Utility, U, is dependent upon how much of good X and good Y he consumes. You are also told that Woody's marginal utility from consuming an additional unit of good X and his marginal utility from consuming an additional unit of good Y are given by the equations:
$$MU_x = y \text{ and } MU_y = x.$$

Suppose you know that Woody maximizes his utility by choosing to consume 10 units of X and 20 units of Y. Given this information, which of the following combinations of prices and income are possible?

   a. Px = $3 per unit of good X, Py = $3 per unit of good Y and income = $90 ✗

   (b.) Px = $3 per unit of good X and Py = $1.50 per unit of good Y and income = $60 ✓

   c. Px = $1.50 per unit of good X and Py = $3 per unit of good Y and income = $75 ✗

   d. Px = $1.50 per unit of good X and Py = $1.50 per unit of good Y and income = $45 ✗

23. Given all of the above information and your work in the last problem, how many units of each good will Woody choose to consume if his income increases by $30?

   (a.) 15 units of good X and 30 units of good Y ✓

   b. 12.5 units of good X and 25 units of good Y

   c. 17.5 units of good X and 35 units of good Y

   d. 20 units of good X and 40 units of good Y

Handwritten work:
$Income = \$90$
$Inc = P_x X' + P_y Y'$
$90 = 3X' + 1.5Y'$
$\frac{Y'}{X'} = \frac{3}{1.5} \Rightarrow Y' = 2X'$
$90 = 3X' + (1.5)(2X')$
$90 = 6X'$
$15 = X' \Rightarrow$ can stop here!
$\Rightarrow$ only (a) has this answer
$\Rightarrow$ But, if $X' = 15 \Rightarrow P_x X' = \$45$
So, $Y' = 2X'$, $Y' = 2(15) = 30$
$P_y Y' = 1.5(30) = \$45$
$90 = P_x X' + P_y Y'$ is true!

— STILL A HARD CONCEPT

24. Given this information, the substitution effect of the increase in Woody's income is equal to _____0_____ and the income effect is equal to _____:

There is no substitution effect!!

   a. An increase of 2.5 units of X; an increase of 5 units of Y ✗

   b. An increase of 7.5 units of X; an increase of 15 units of Y ✗

   c. An increase of 5 units of X; an increase of 10 units of Y

   d. Zero; an increase of 5 units of X and 10 units of Y ✓

Handwritten work (bottom):

$U = xy$
$MU_x = y$
$MU_y = x$
Optimality Condition:
$\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$
$\frac{Y}{X} = \frac{P_x}{P_y}$

#22. He max U when X = 10, y = 20 pt. A
$\frac{20}{10} = \frac{P_x}{P_y}$
$2P_y = P_x$ so P_x must be twice P_y! $\Rightarrow$ rules out (a), (c), (d)
$\Rightarrow$ Answer (b) better be right!
if $P_x = \$3 \Rightarrow P_x X = (3)(10) = \$30$
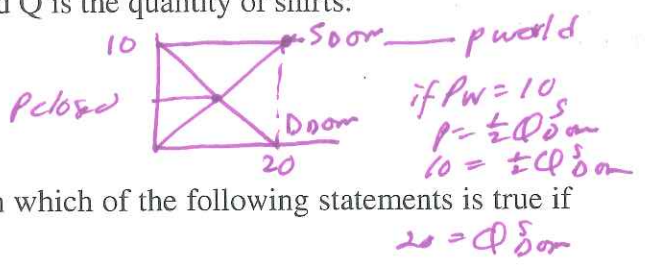if $P_y = \$1.50 \Rightarrow P_y Y = (1.5)(20) = \$30$
Bundle costs $\Rightarrow \$60$
Implies Income = $60 ✓
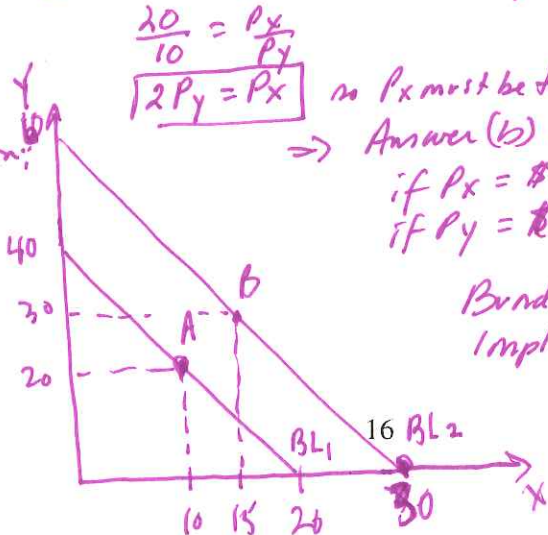
BL_1: Inc = 60, $P_x = \$3$, $P_y = \$1.50$
BL_2: Inc = 90, $P_x = \$3$, $P_y = \$1.50$

25. You are given the following equations that describe the domestic supply and the domestic demand for t-shirts where P is the price per shirt and Q is the quantity of shirts:

(handwritten note box:) CONCEPTUALLY A BIT CHALLENGING: BUT NOT REALLY HARD

Domestic Demand: $P = 10 - (1/2)Q$
Domestic Supply: $P = (1/2)Q$

(handwritten graph annotations:) 10 — S_{Dom} — P_{world}, P_{closed}, D_{Dom}, 20; if $P_W = 10$, $P = \frac{1}{2}Q^S_{Dom}$, $10 = \frac{1}{2}Q^S_{Dom}$, $20 = Q^S_{Dom}$

If the world price of a t-shirt is $10 per t-shirt, then which of the following statements is true if this market is opened to trade?

a. The country will import 5 t-shirts. ✗ $P_W > P_{closed} \Rightarrow$ Country will export
b. The country will export 10 t-shirts. ✗ If $P_w = \$10 \Rightarrow$ country will export 20 T-shirts
c. Domestic suppliers will not be able to produce enough t-shirts to supply the domestic demand for shirts. ✗ At P_W there is no domestic demand for t-shirts
d. ⓓ Domestic suppliers will supply t-shirts only to foreign consumers. TRUE All domestic production is exported if this market is opened to trade.

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

Let's remember the following question from the first midterm.
The former Soviet Union (U.S.S.R.) economy was based on a system of state ownership of all forms of production with centralized administrative planning determining the types and quantities of goods produced. Centralized planners determined prices in this system. Assume that the following equations describe the domestic market demand and market supply in the USSR shoe market where P is the market price in Rubles per pair of shoes and Q is the quantity of pairs of shoes:
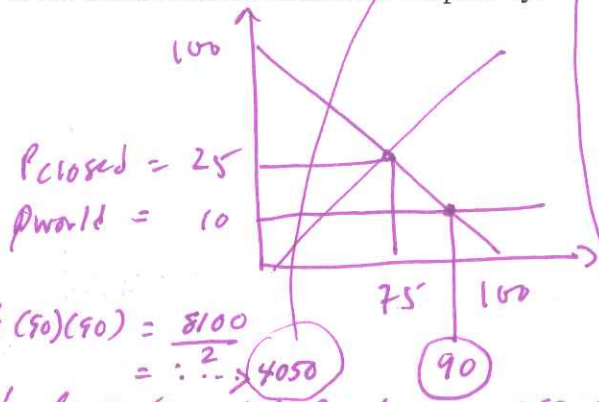
Domestic market demand for shoes in the USSR: $P = 100 - Q$
Domestic market supply of shoes in the USSR: $P = (1/3)Q$

(handwritten:)
$\begin{array}{r} 4050.0 \\ -2812.5 \\ \hline 1237.5! \end{array}$

Now assume that the centralized committee allows international trade instead of setting an effective price ceiling for each pair of shoes. You are also told that the world price for each pair of shoes is 10 Rubles.

26. What would happen to the consumer surplus if the central committee allows international trade and opens this market for shoes to the world market? The domestic consumer surplus in this market will increase relative to the closed market consumer surplus by:

(handwritten note box:) SOME WORK, BUT NOT HARD

a. $2475.00
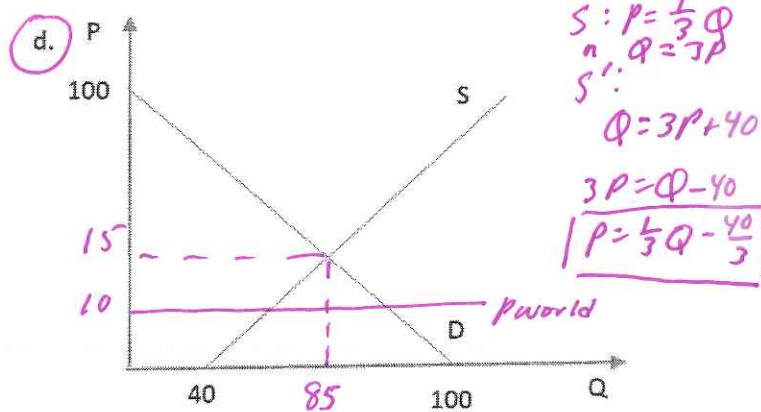b. ⓑ $1237.50
c. $2825.00
d. $1412.50
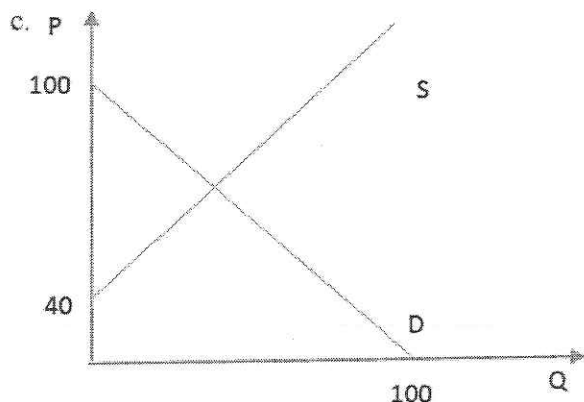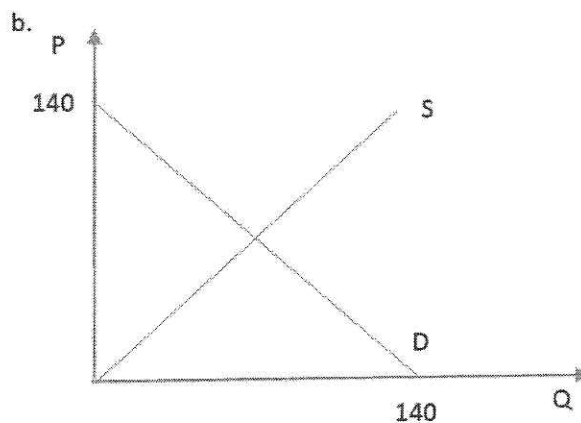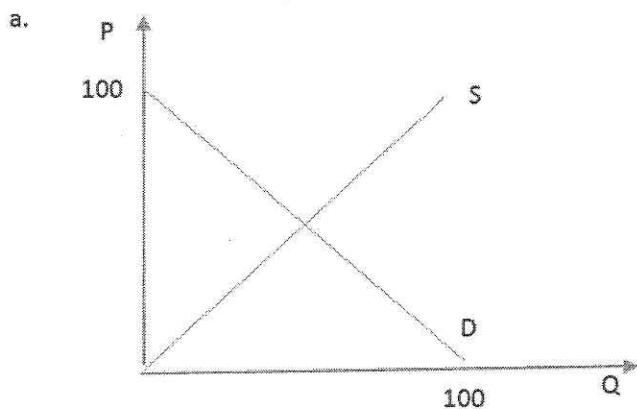
(handwritten work, right side:)
closed economy
$100 - Q = \frac{1}{3}Q$
$100 = \frac{4}{3}Q$
$\frac{3}{4}(100) = Q$
$75 = Q$
$CS = \frac{1}{2}(100 - 25)(75)$
$= \frac{1}{2}(75)(75)$
I'm holding on this math ⇒ might be an easier way
$\frac{112.5}{1125}$ #1237.5 $= \frac{1}{2}(70+5)(70+5)$
$= \frac{1}{2}(4900 + 350 + 350 + 25)$
$= \frac{1}{2}(5625) = 2812.5$

(handwritten work, left/center:)
$P_{closed} = 25$
$P_{world} = 10$

Open economy
$P_W = 10 \Rightarrow Q^D_{Dom} = 90$
$CS_{open} = \frac{1}{2}(100 - 10)(90) = \frac{1}{2}(90)(90) = \frac{8100}{2} = \ldots 4050$

Δ in CS from opening mkt to trade $= (25-10)(75) + \frac{1}{2}(25-10)(90-75)$
$= 15(75) + \frac{1}{2}(15)(15)$
$= 15(70+5) + \frac{1}{2}(225)$
$= 1050 + 75 + 112.5$
$= 1125 + 112.5 = \$1237.50$

(graph annotations:) 100, 75, 100, 90

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27. Suppose that just before the central committee announces its decision to allow international trade some people in the USSR travel to Yugoslavia and buy 40 pairs of shoes to bring back and sell in the USSR. The central committee realizes that these citizens have impacted this market. Which of the following graphs best represents this new situation?

a.

b.

c.

d. (circled)

Handwritten:
$S: P = \frac{1}{3}Q$
$Q = 3P$
$S':$
$Q = 3P + 40$
$3P = Q - 40$
$\boxed{P = \frac{1}{3}Q - \frac{40}{3}}$

28. After this change in the market for shoes in the USSR, the central committee issues their edict allowing international trade, but they also decide to simultaneously impose a tariff on this market. If the central committee wishes to maximize the government's revenue from this tariff, which of the following tariffs would be best to reach this goal?

   a. A tariff of $2.50 per pair of imported shoes   (circled)
   b. A tariff of $5.00 per pair of imported shoes X
   c. A tariff of $7.50 per pair of imported shoes X
   d. A tariff of $10.00 per pair of imported shoes X

→ With these tariffs, the gov't gets no tariff revenue ⇒ see graph!

For 28: Find new price if closed mkt:
$S': P = \frac{1}{3}Q - \frac{40}{3}$
$D: P = 100 - Q$
$\frac{1}{3}Q - \frac{40}{3} = 100 - Q$
$Q - 40 = 300 - 3Q$
$4Q = 340$
$Q = 85$
$P = 100 - Q = 100 - 85 = 15$

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

29. Hank's total utility in terms of money (for example U=10 means Hank is willing to pay up to $10 for the bundle) is given in the following table.

$= \frac{\Delta TU}{MU \ \Delta Q}$

Number of Espresso Shots Consumed	Utility, U, from consuming Espresso Shots	
5	20	$\frac{20}{5} = 4$
6	26	$\frac{6}{1} = 6$
8	29	$\frac{3}{2} = 1.5$
9	30	$\frac{1}{1} = 1$

If the price of one shot of Espresso is $2, how many shots of Espresso will Hank consume given the above table and information? Recall that Hank will want to compare his marginal utility to the price of the good when making this decision.

    a. 5 shots of Espresso
    b. 6 shots of Espresso ✓
    c. 8 shots of Espresso
    d. 9 shots of Espresso

P of 1 shot = 2

END OF EXAM!

5th shot of Espresso costs $2 => The MU from 5th shot is $4 => Hank should buy it

6th shot of Espresso costs $2 => The MU from 6th shot is 3 units or $3 => Hank should buy it

8th shot of Espresso costs $2 => MU from 8th shot is $1.5 => Hank should not buy it