

Economics 101
 Fall 2017
 November 16, 2017
 Midterm 2

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 WILL RECEIVE 2 BONUS POINTS FOR FOLLOWING ALL DIRECTIONS
 ON THIS COVER SHEET CORRECTLY.**

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 for a total of 98 points. 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 for an additional 2 points. Answer all questions on the scantron sheet with a #2 pencil. There are 17 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 (family) name and first (given) name, in the spaces marked "Last Name," and "First Name." 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.

Gary Baker	Andy Lehrer	Zaure (April) Aitkulova	Yiyou Zhang	Wenbo Min
315 Tr 3:30-4:20 2319 Sterling	308 F 8:50-9:40 B325 Van Vleck	301 T 3:30-4:20 B325 Van Vleck	310 F 11:00-11:50 B313 Van Vleck	313 F 8:50-9:40 B312 Van Vleck
303 F 1:20-2:10 386 Van Hise	311 F 9:55-10:45 395 Van Hise	306 T 4:35-5:25 5322 Soc Sci	305 F 12:05-12:55 386 Van Hise	316 F 12:05-12:55 224 Ingraham
	307 F 11:00-11:50 B309 Van Vleck	312 F 9:55-10:45 483 Van Hise	314 F 1:20-2:10 374 Van Hise	317 F 1:20-2:10 2319 Sterling
	304 F 12:05-12:55 482 Van Hise	309 F 11:00-11:50 B333 Van Vleck	318 F 2:25-3:15 116 Ingraham	302 F 2:25-3:15 215 Ingraham

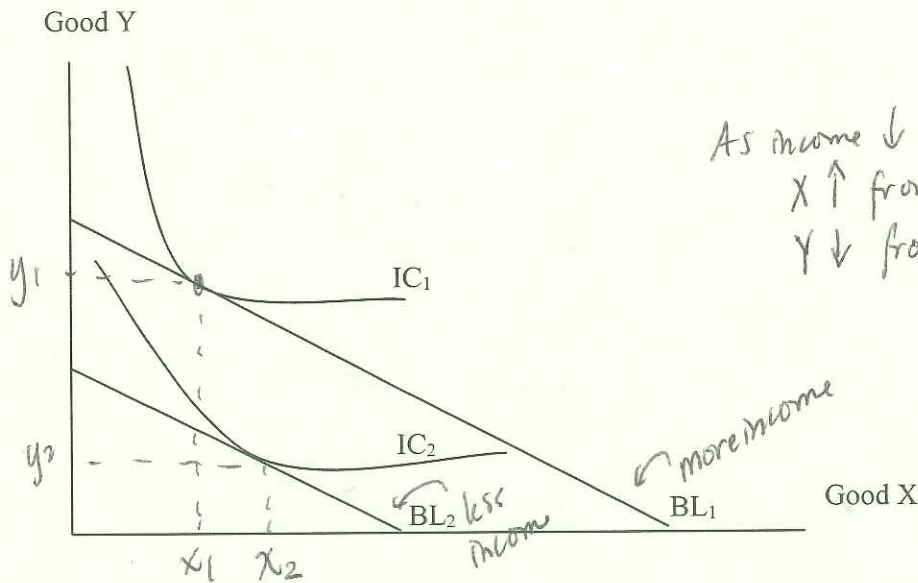
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DO NOT DETACH THIS SHEET FROM THIS EXAM BOOKLET!
EXAM CONTINUES ON NEXT PAGE

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 _____

Binary Choice (worth 2 points each)

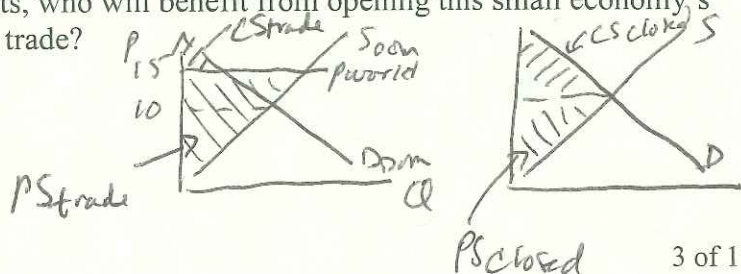
1) Based on the following graph, which of the following statements is true?



- a) X is a normal good, and Y is an inferior good.
- b) X is an inferior good, and Y is a normal good.

2) Consider the doughnut market in a small economy. When the economy is closed to trade, the domestic equilibrium price is \$10 per dozen doughnuts. If the world price for donuts is \$15 per dozen doughnuts, who will benefit from opening this small economy's doughnut market to international trade?

- a) Domestic Producers
- b) Domestic Consumers



Not too Bad

Easy

Challenging
 => Abstract math

3) Consider the market for corn that can be described by the following demand and supply equations where P is the price per unit of corn and Q is the quantity of units of corn:

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

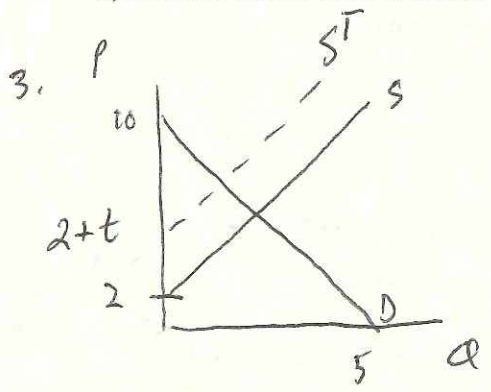
The government decides to implement an excise tax of \$t for each unit of corn. What is the price that consumers pay in equilibrium after the tax is implemented (in terms of t)?

- a) $2 - (1/4)*t$
- b) $6 + (1/2)*t$

MORE DIFFICULT

4) Suppose Alice earned \$20,000 last year. This year her income increased by \$5,000, but at the same time, the prices of all goods increased by 30%. In real terms, is Alice richer or poorer than she was last year?

- a) Alice is poorer in real terms.
- b) Alice is richer in real terms.



Supply w/ Excise Tax: $P = (2+t) + 2Q$

$$2 + t + 2Q = 10 - 2Q$$

$$4Q = 8 - t$$

$$Q = 2 - \frac{1}{4}t$$

$$P_{tax} = 10 - 2Q$$

$$P_{tax} = 10 - 2 \left[2 - \frac{1}{4}t \right]$$

$$P_{tax} = 10 - 4 + \frac{1}{2}t = 6 + \frac{1}{2}t$$

4. $Income_{y1} = 20,000$ $Income_{y2} = 25,000$

$$\frac{25000 - 20000}{20000} [100\%] = 25\% \Delta \text{ in income}$$

$$\frac{5000}{20000} [100\%] = 25\% = 25\% \Delta \text{ in income}$$

Prices went up more than her nominal income =>
 Alice is poorer

HARD

5) Suppose the government is investigating an excise tax on widgets. The government finds that if it lowers the tax by 5%, the equilibrium quantity of widgets sold *increases* by 6%. Given this information, which of the following policies should the government undertake if it wishes to maximize tax revenue?

This is an Elasticity Question

$$E^D = \left| \frac{\% \Delta Q^D}{\% \Delta P} \right| = \left| \frac{6\%}{-5\%} \right| > 1$$

Demand is Elastic: to ↑ revenue govt. should reduce the excise tax

- a) The government should increase the excise tax on widgets.
- b) The government should decrease the excise tax on widgets.

EASY: Repeats idea of #2

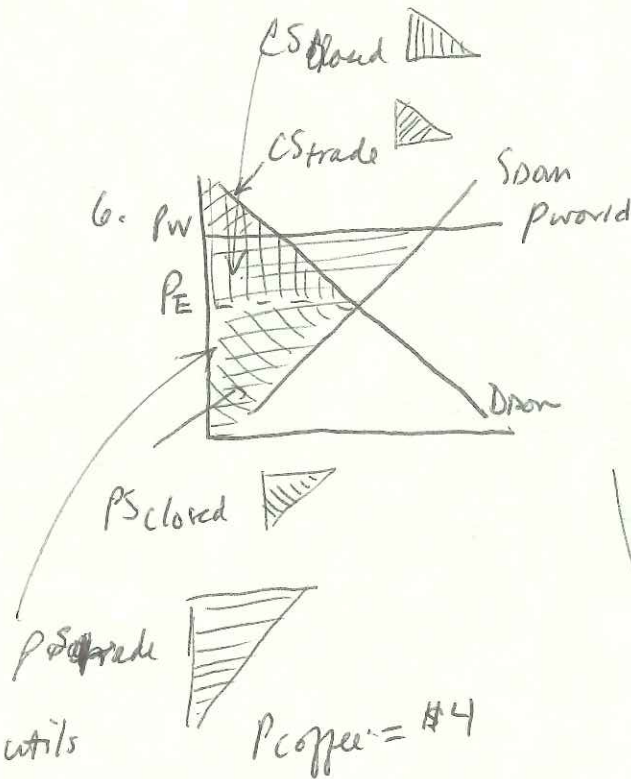
6) Suppose X is a small economy. Initially, X is closed to international trade in the market for dairy products. When closed to trade, we observe an equilibrium domestic price, P_E . Now suppose X opens the domestic dairy market to international trade, where the world price is $P_W > P_E$. Given this information and holding everything else constant, which of the following scenarios will occur when this market is opened to international trade?

- a) Consumer surplus will increase, and producer surplus will decrease.
- b) Consumer surplus will decrease, and producer surplus will increase.

A BIT CHALLENGING

7) Susie's marginal utility from consuming an additional cup of coffee is 10 utils and her marginal utility from consuming an additional bagel is 20 utils. The price of a cup of coffee is \$4 per cup. If Susie knows that her utility will be increased by consuming more bagels and less coffee given this information, then it must be true that the price of a bagel is:

- a) less than \$8.
- b) more than \$8.



if $P_{\text{bagels}} = \$8 \Rightarrow \frac{MU_{\text{bagels}}}{P_{\text{bagels}}} = 2.5$
 if $P_{\text{bagels}} < \$8$
 e.g. $P_{\text{bagels}} = \$5$
 $\frac{MU_{\text{bagels}}}{P_{\text{bagels}}} = \frac{20}{5} = 4$
 \Rightarrow Buy more Bagels!

7. $MU_{\text{coffee}} = 10$ utils
 $MU_{\text{bagel}} = 20$ utils

$P_{\text{coffee}} = \$4$

$$\frac{MU_{\text{coffee}}}{P_{\text{coffee}}} = \frac{10}{4} = 2.5 < \frac{MU_{\text{bagels}}}{P_{\text{bagels}}} = \frac{20}{?}$$

NOT HARD

8) Suppose at a price of \$20, the total market supply of widgets is 50 units. If the price is \$21, then we observe a market supply of 51 units. Given this information, which of the following is true?

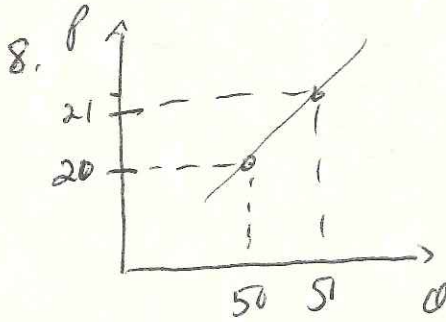
- a) Market supply is *inelastic* in this range of prices.
- b) Market supply is *elastic* in this range of prices.

CHALLENGING

9) Consider the market for gadgets in a small, open economy, whose government has imposed a binding import quota (i.e. the domestic price with the import quota is now above the world price). Given this information and holding everything else constant, if the government increases this import quota, which of the following statements is true?

means we are importing more units (!)

- a) Domestic consumer surplus decreases, and license-holder revenue increases.
- b) Domestic consumer surplus increases, and the impact on license-holder revenue is indeterminate.

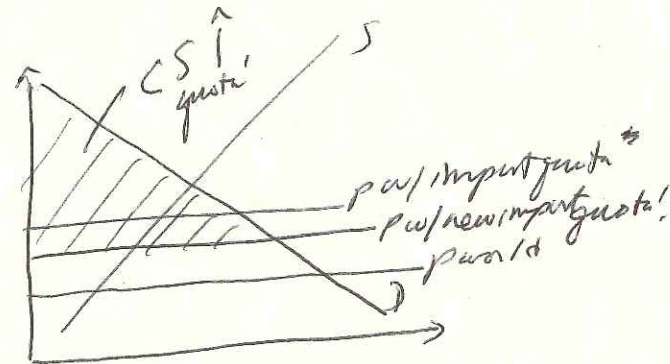
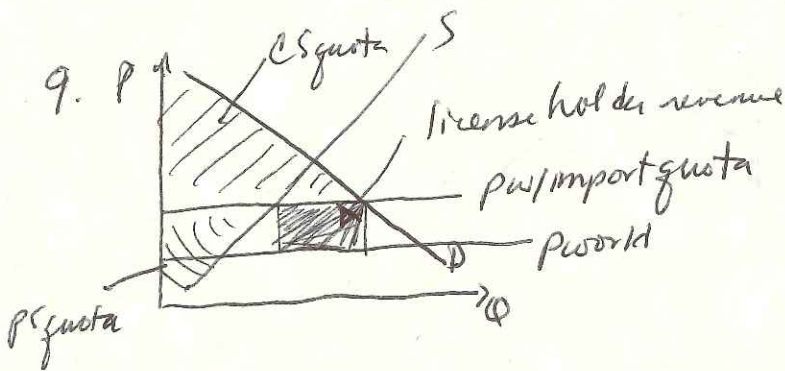


$$(Q_1, P_1) = (50, 20)$$

$$(Q_2, P_2) = (51, 21)$$

$$E^S = \frac{51 - 50}{\frac{21 - 20}{41}} = \frac{1}{\frac{1}{41}}$$

$$E^S = \frac{1}{101} \left(\frac{41}{1} \right) = \frac{41}{101} < 1 \text{ inelastic}$$



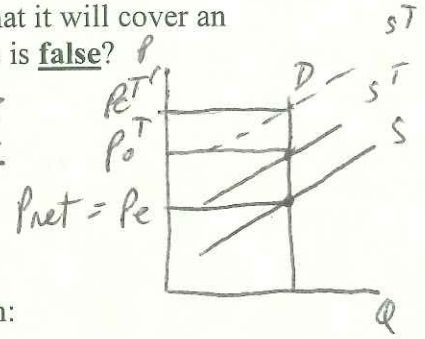
Multiple Choice (worth 4 points each)

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

Suppose, in the market for gas, consumers buy a constant amount of gas regardless of price and the supply curve for gas is linear and positively sloped.

10) Assume that the government had already implemented an excise tax in this market. The government decides to increase the excise tax in hopes that it will cover an unexpected budget deficit. Which of the following statements is **false**?

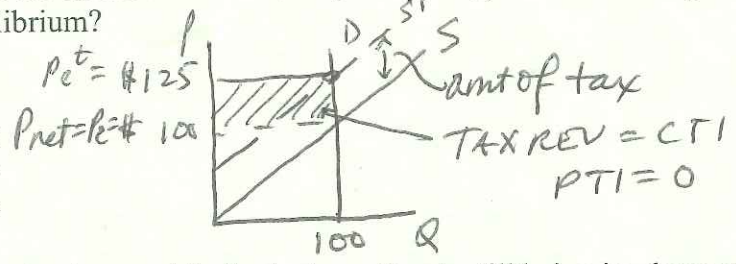
- a) Consumer tax incidence will be unaffected. CTI will \uparrow **F**
- b) Producer tax incidence will increase. $PTI = PTI' = 0$ **F**
- c) Government revenue will increase. **T**
- d) The deadweight loss as a result of the tax will not change. $DWL = DWL' = 0$



The next two (2) questions are based on the same information:

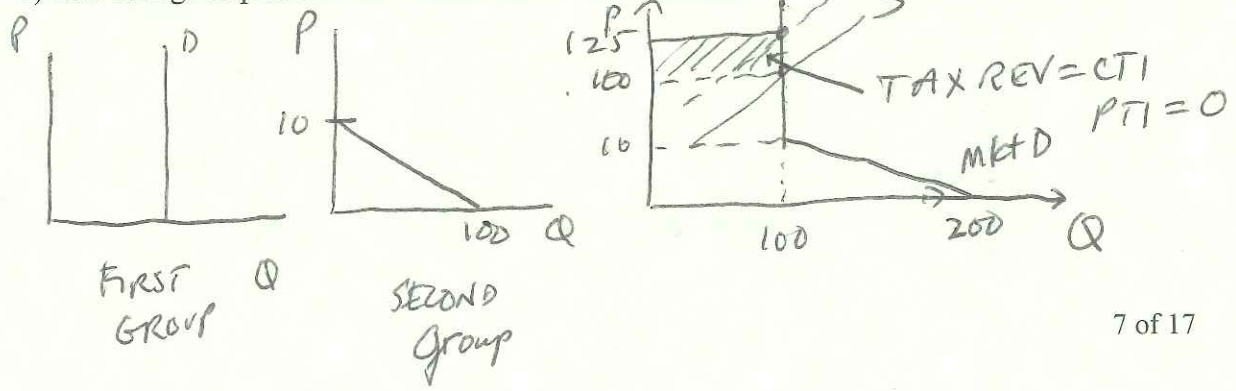
11) Assume that consumers inelastically demand 100 units of gas, and the supply curve is given by the equation: $P = Q$ where P is the price per unit of gas and Q is the quantity of units of gas. The excise tax in this market is \$25 per unit of gas. What is the price consumers pay in equilibrium?

- a) \$75 per unit of gas
- b) \$100 per unit of gas
- c) \$125 per unit of gas
- d) \$150 per unit of gas



12) Assume that the gas tax imposed in the last question is still being implemented and that the supply curve is unchanged from the one you were provided in the last question. Suppose a second group of consumers enters this gas market. This second group only buys gas if the price is below \$10 per unit of gas. Below that price, the total demand for this second group is given by $Q = 100 - 10P$. How does the entry of this group affect producer tax incidence? (Hint: Horizontally sum this new demand with the previous inelastic demand.)

- a) Producer tax incidence increases.
- b) Producer tax incidence stays the same.
- c) Producer tax incidence decreases.
- d) The change in producer tax incidence is indeterminate.



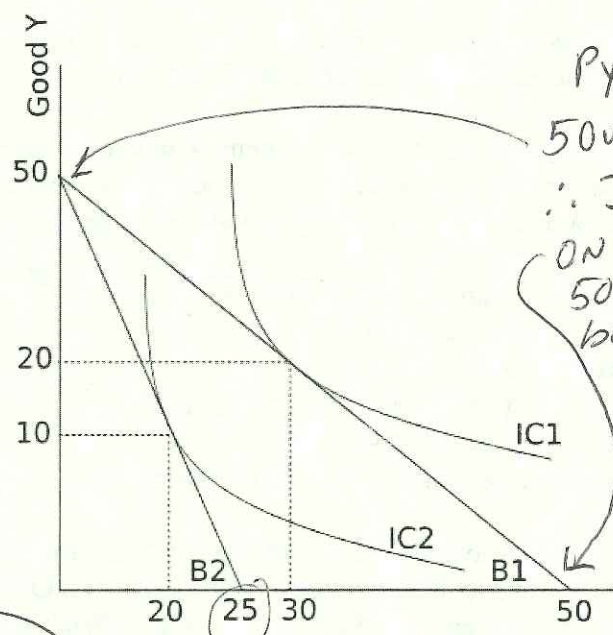
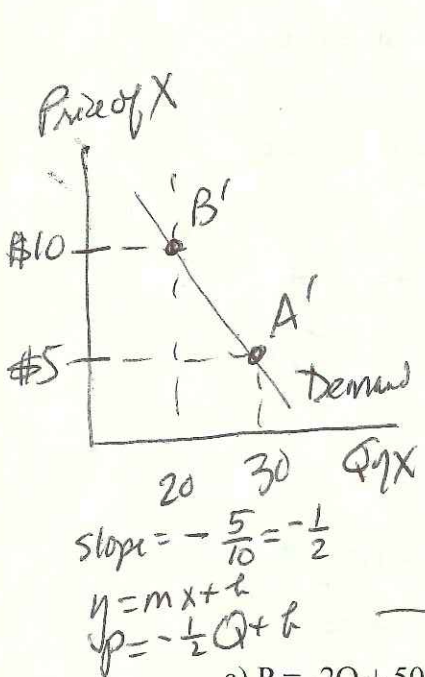
NOT HARD
IF YOU
CAN SEE
IT
TWO
ANSWERS
ACCEPTED!

EASY

NOT HARD
IF YOU
CAN SEE
IT

SOME WORK
HERE:
PREDICTABLE

13) Using the following graph, derive the demand equation for good X. Assume income is the same for B1 and B2, that the price of Y is \$5 for B1 and B2, and that demand for good X is linear.



$P_y = \$5$
50 units of Y costs \$250
 \therefore Income = \$250
On B_1 , individual can buy 50 units of X if he only buys X $\Rightarrow P_x = \frac{250}{50} = \5

Income $B_2 = 250$
 $P_y = \$5$
 $P_x' = ?$
Individual can buy 25 units of X if he only buys X $\Rightarrow P_x' = \frac{250}{25} = \10

- a) $P = -2Q + 50$
- b) $P = (-1/2)Q + 20$**
- c) $P = -2Q + 40$
- d) $P = (-1/10)Q + 20$

$10 = -\frac{1}{2}(20) + b$
 $20 = b$
 $P = 20 - \frac{1}{2}Q$

SOME WORK

14) Suppose the price of beer is \$2 per serving, and the price of cheese curds is \$10 per serving. At these prices, we observe that the quantity of beer demanded is 50. If the demand elasticity of beer in the price of cheese curds (the cross-price elasticity) is -3, approximately how will the quantity demanded for beer change following a \$1 increase in the price of cheese curds?

- a) Demand for beer will increase by 3 units.
- b) Demand for beer will decrease by 3 units.
- c) Demand for beer will decrease by 30 units.
- d) Demand for beer will decrease by 15 units.**

$P_{\text{BEER}} = 2$ $Q_{\text{BEER}} = 50$
 $P_{\text{CC}} = 10$ $P_{\text{CC}}' = \$11$

$E_{\text{BEER,CC}} = \frac{\% \Delta Q_{\text{BEER}}^D}{\% \Delta P_{\text{CC}}} = -3$

$\frac{50 \times (-3)}{-15}$

↓ of 15 units of beer

$\frac{\% \Delta Q_{\text{BEER}}^D}{10\%} = -3$
 $\% \Delta Q_{\text{BEER}}^D = -30\%$

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

Amy is trying to decide what groceries to buy for today. Amy only consumes Milk (M) and Bread (B). She observes that if she spends all the money she has allocated for groceries on bread, she can afford 6 loaves. Alternatively, she can afford precisely 3 pints of milk if she spends all her money on milk. Suppose a loaf of bread costs \$1.

NOT HARD

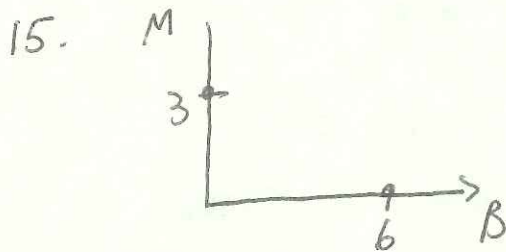
15) Which of the following equations represents Amy's budget line and Income (I)?

- a) $M = 6 - 2B$; $I = \$6$ ✓
- b) $M = 3 - 2B$; $I = \$3$ ✗
- c) $M = 3 - (1/2)B$; $I = \$6$ ✓
- d) $M = 6 - (1/2)B$; $I = \$3$ ✗

CONCEPTUALLY
A LITTLE
MORE
CHALLENGING

16) Suppose milk and bread are perfect complements for Amy: that is, Amy always consumes milk and bread in the same 1 to 1 ratio of milk to bread. Given this information as well as the initial information and holding everything else constant, which of the following consumption bundles represents Amy's optimal consumption bundle?

- a) $M = 3, B = 6$
- b) $M = 3, B = 3$
- c) $M = 2, B = 2$
- d) $M = 0, B = 6$



$P_{\text{bread}} = \$1 \Rightarrow 6 \text{ loaves will cost } \$6 \Rightarrow \therefore \text{ her income is } \6
 $\frac{\$6}{3 \text{ milk}} \Rightarrow \$2/\text{milk} \Rightarrow P_{\text{milk}} = \$2/\text{unit}$
 BL: $\text{Income} = P_B B + P_M M$
 $6 = B + 2M$
 $2M = 6 - B$

16. $M=B$ always consumed 1:1

$$M = 3 - \frac{1}{2}B$$

$$B = 3 - \frac{1}{2}B$$

$$\frac{3}{2}B = 3$$

$$B = 3 \left(\frac{2}{3}\right) = 2$$

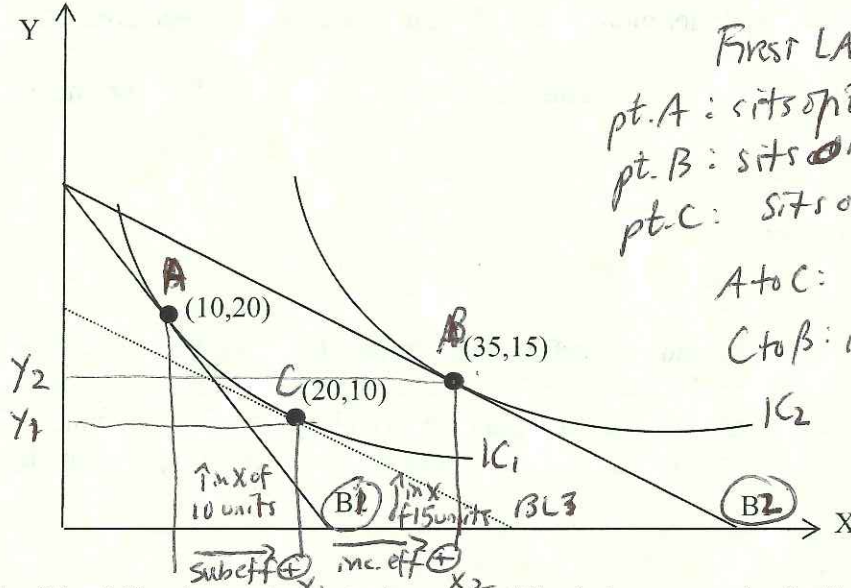
$\therefore M = B = 2$ units of each good

$$M = 3 - \frac{1}{2}B$$

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

NOT HARD
ONCE WE
GET THE
LABELS
STRAIGHT!

Alice consumes only goods X and Y. The following graph represents Alice's utility maximization problem following an increase in the price of X, changing her budget line from B1 to B2.



First LABEL Pts. & ICs:
pt. A: sits on B1 & IC1
pt. B: sits on B2 & IC2
pt. C: sits on B3 & IC1
A to C: sub. eff.
C to B: inc. eff.

17) Which of the following statements describes Alice's income and substitution effects given the above information and graph?

- a) Income effect is +15 units of X; and Substitution effect is +10 units of X.
- b) Income effect is +10 units of X; and Substitution effect is +15 units of X.
- c) Income effect is +25 units of X; and Substitution effect is +10 units of X.
- d) Income effect is +15 units of X; and Substitution effect is +25 units of X.

NOT HARD

18) Given the above graph, which of the following statements about X and Y is true?

- a) X and Y are both normal goods.
- b) X is a normal good, and Y is an inferior good.
- c) X is an inferior good, and Y is a normal good.
- d) X and Y are both inferior goods.

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

Suppose the nominal prices of coffee and pizza in 2014 and 2015 in Narnia are given by the following table:

Year	Price per Cup of Coffee	Price per Pizza
2014	\$1.50	\$14.00
2015	\$3.00	\$3.00

Suppose a typical consumer consumes of 4 cups of coffee and 1 pizza per day.

MARKET BASKET

PREDICTABLE 19) Suppose the base year is 2014 and the CPI is measured on a 100 point scale. What is the CPI for 2015 given the above information and holding everything else constant?

- a) 50
- b) 75**
- c) 100
- d) 125

NOT HARD: 20) As measured in 2014 dollars, what is the real price of a pizza in 2015?

- SWEET NUMBERS!**
- a) \$2.25
 - b) \$4.00**
 - c) \$1.00
 - d) \$14.00

19. Cost of Market Basket

$$2014 \quad (4)(1.50) + (1)(14.00) = 6 + 14 = 20$$

$$2015 \quad (4)(3) + (1)(3) = 12 + 3 = 15$$

$$CPI \rightarrow \frac{\text{cost of mkt basket year}}{\text{cost of mkt basket BY}} \text{ [scale factor]}$$

$$2014 \quad \frac{20}{20} (100) = 100$$

$$2015 \quad \frac{15}{20} (100) = 75$$

20.

$$\text{real price of pizza} = \frac{\text{nom price}}{CPI} \text{ [scale]}$$

$$\text{real price of pizza w/ 2014 BY} = \frac{3}{75} (100) = \$4$$

Use the following information for the next three (3) questions:

The market for coconuts on a small island is described by the following equations, where P is the price of coconuts in dollars and Q is the quantity of coconuts:

Domestic Demand: $P = 10 - (1/20)Q$

Domestic Supply: $P = 1 + (1/10)Q$

The world price of coconuts is \$4.

21) Given the above information, if this small island opens to trade in the world coconuts market, how many coconuts will it import?

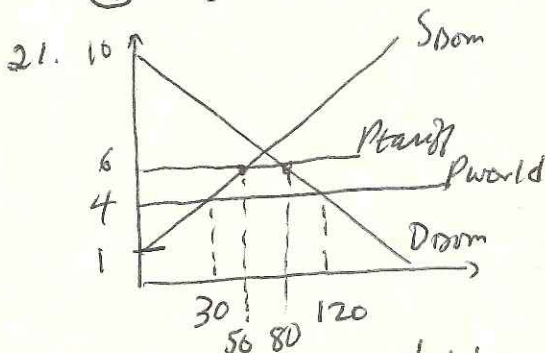
- a) Imports = 30 coconuts
- b) Imports = 60 coconuts
- c) Imports = 90 coconuts
- d) Imports = 120 coconuts

22) Now suppose the government of this island imposes a tariff of \$2 per imported coconut. What will be the change in Consumer Surplus from this tariff relative to the value of consumer surplus in this market if it is open to world trade?

- a) Consumer surplus will be unchanged.
- b) Consumer surplus will decrease by \$60.
- c) Consumer surplus will increase by \$70.
- d) Consumer surplus will decrease by \$200.

23) Suppose the government wanted to achieve the same outcome as they get with a tariff of \$2 per imported coconut but with the implementation of an import quota instead. Assume that the government implements this import quota in such a way that the government can capture all of the license-holder revenue from this program. To achieve this result, the import quota should be set equal to _____.

- a) 90 imported coconuts
- b) 80 imported coconuts
- c) 50 imported coconuts
- d) 30 imported coconuts



$$\begin{aligned}
 D: 4 &= 10 - \frac{1}{20}Q^D \\
 \frac{1}{20}Q^D &= 6 \\
 Q^D &= 120 \\
 S: 4 &= 1 + \frac{1}{10}Q^S \\
 3 &= \frac{1}{10}Q^S \\
 30 &= Q^S \\
 \text{Imports} &= Q^D - Q^S = 120 - 30 = 90
 \end{aligned}$$

$$\begin{aligned}
 CS \text{ open to trade} &= \frac{1}{2}bh \\
 &= \frac{1}{2}(10-4)(120) \\
 &= \frac{1}{2}(6)(120) \\
 &= 3(120) = \$360
 \end{aligned}$$

EASY

SOME MATH: NOT HARD

EASY IF YOU GOT PREVIOUS QUESTION

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EXAM CONTINUES ON NEXT PAGE

Tariff Price = \$6

$$D: 6 = 10 - \frac{1}{20} Q^D$$

$$\frac{1}{20} Q^D = 4$$

$$Q^D = 80$$

$$S: 6 = 1 + \frac{1}{10} Q^S$$

$$5 = \frac{1}{10} Q^S$$

$$50 = Q^S$$

} Checking to see if
tariff is effective →
it is

$$\begin{aligned} CS_{\text{tariff}} &= \frac{1}{2}bh \\ &= \frac{1}{2}(10-6)(80) \\ &= \frac{1}{2}(4)(80) \\ &= 2(80) = 160 \end{aligned}$$

Imports w/ tariff = $80 - 50 = 30!$

$$\Delta \text{ in } CS_{\text{tariff}} = 360 - 160 = 200 \quad CS \downarrow \text{ by } \$200$$

#23

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

Oscar graduates in May and has gotten the following job offers:

Location	Nominal Annual Salary Offer
New York City	\$60,000
Minneapolis	\$48,000
Chicago	\$56,000
San Diego	\$72,000

Real Salary NY \$
 $\$60,000$
 $(48,000/80)(100) = \$60,000$
 $62,222$
 $57,600$

See next page

Oscar knows that the cost-of-living in Minneapolis is 20% lower than the cost of living in New York City. He knows that the cost-of-living in Chicago is 10% lower than in New York City. He knows that the cost-of-living in San Diego is 25% higher than in New York City. Assume that each of these job offers is equivalent and that Oscar only cares about maximizing his real income as measured in New York City dollars during his first year of employment.

NOT HARD:
 SOME
 DATA TO
 READ +
 ORGANIZE

24) Given this information and holding everything else constant, suppose you were going to create a CPI measure for each of these cities using New York City as the base city and therefore giving the CPI for New York City a value of 100. Which of the following four options represents the CPI for these cities given the information above?

Location	Option A: CPI	Option B: CPI	Option C: CPI	Option D: CPI
New York City	100	100 ✓	100	100
Minneapolis	90 X	80 ✓	90 X	80 ✓
Chicago	80	90 ✓	80 X	90 ✓
San Diego	125	75 X	75	125 ✓

- a) Option A
- b) Option B
- c) Option C
- d) Option D

SOME
 WORK

25) Given this information and holding everything else constant, rank these options from highest real purchasing power to lowest real purchasing power for next year.

- a) Chicago, New York City, Minneapolis, and San Diego
- b) Minneapolis, San Diego, New York City, Chicago
- c) Minneapolis, New York City, San Diego, and Chicago
- d) San Diego, Minneapolis, New York City, and Chicago

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Minneapolis

$$\frac{48,000}{84} (10\phi) = (6000)(10) = \$60,000 \Rightarrow \text{equivalent to NYC}$$

Chicago

$$\frac{56,000\phi}{9\phi} (100) = \$62,222 \Rightarrow \text{Better Than NYC}$$

$$\begin{array}{r} \overline{62222} \\ 9 \overline{) 560000} \\ \underline{54} \\ 20 \\ \underline{18} \\ 20 \end{array}$$

San Diego

$$\frac{72,000}{125} (100) = \frac{72000(4)}{5}$$

$$= (14,400)(4)$$

$$= \$57,600 \Rightarrow \text{lower than NYC}$$

$$\begin{array}{r} \overline{14400} \\ 5 \overline{) 72000} \\ \underline{5} \\ 22 \\ \underline{20} \\ 14,400 \\ \underline{4} \\ 57600 \end{array}$$

- #1 Chicago
- #2 Minneapolis, NYC
- #3 San Diego

Use the following information for the next two (2) questions:

Consider the market for cheese curds sold at Memorial Union. Suppose the Union notices that when they set the price of cheese curds at \$6, they sell 40 units a day. Further, they notice that when the price is \$3, they sell 80 units per day. Assume the demand curve for cheese curds is linear.

PREDICTABLE: 26) Using the arc (midpoint) formula, calculate the price elasticity of demand between these two points.
EASY

- a) 1/2
- b) 1
- c) 4/3
- d) 2

NOT HARD 27) Given the above information, which of the following is true?

- a) The revenue maximizing price is above \$6. ~~X~~
- b) The revenue maximizing price is below \$3. ~~X~~
- c) The revenue maximizing price is between \$3 and \$6. ~~✓~~
- d) All prices give the same revenue.

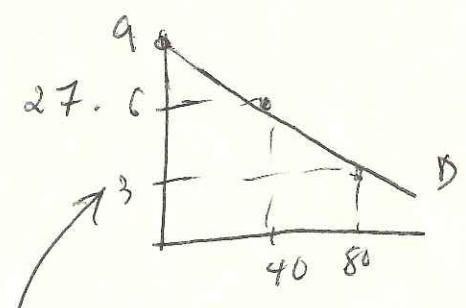
26.

$$(Q_1, P_1) = (40, 6)$$

$$(Q_2, P_2) = (80, 3)$$

$$E_D = \left| \frac{\frac{Q_2 - Q_1}{Q_1 + Q_2}}{\frac{P_2 - P_1}{P_1 + P_2}} \right| = \left| \frac{\frac{80 - 40}{120}}{\frac{3 - 6}{9}} \right| = \frac{\frac{40}{120}}{\frac{3}{9}} = \frac{1}{3} \div \frac{1}{3} = 1$$

$$E_D = \frac{1}{3} \div \frac{1}{3} = \frac{1}{3} \left(\frac{3}{1} \right) = 1$$



★ rev. maximizing price is \$4.50

Slope of Demand = $-\frac{3}{40}$

$$P = -\frac{3}{40}Q + b$$

$$6 = -\frac{3}{40}(40) + b$$

$$9 = b$$

$$P = 9 - \frac{3}{40}Q$$

Use the following information for the next two (2) questions:

Consider the market for sneakers in a small economy that can be described by the following equations, where P is the price per pair of sneakers and Q is the quantity of pairs of sneakers:

Domestic Demand: $Q = 200 - 20P$
Domestic Supply: $Q = 20P - 100$

$$20P = 200 - Q$$
$$P = 10 - \frac{1}{20}Q$$

Furthermore, you know this economy's market for sneakers is open to international trade and the world price of sneakers is \$3 per pair of sneakers.

28) Suppose now the government implements a quota of 120 pairs of imported sneakers. Given the above information and holding everything else constant, which of the following statements is **false**?

- a) After the imposition of the import quota the new level of imports is equal to the import quota amount. **T**
- b) The new domestic equilibrium price is \$4 per pair of sneakers. **T**
- c) Domestic Producer Surplus will increase due to the imposition of this import quota. **F**
- d) Relative to the level of Consumer Surplus when this economy is open to trade, the value of Consumer Surplus when this import quota is implemented will be smaller. **T**

PS is not changed \Rightarrow
PS = 0

29) What is the deadweight loss (DWL) due to the implementation this import quota?

- a) DWL = \$10
- b) DWL = \$20
- c) DWL = \$120
- d) DWL = \$130

SEE NEXT PAGE

$$D: Q = 200 - 20P$$

$$S: Q = 20P - 100$$

$$P_w = \$3$$

Rewrite D in y-intercept form:

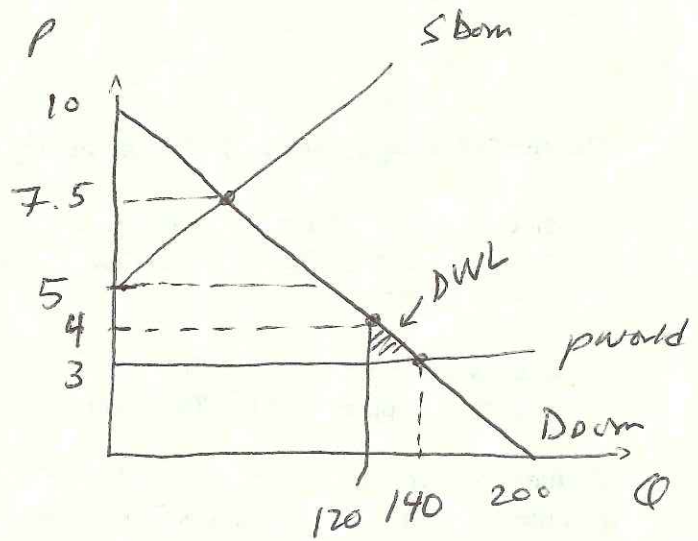
$$20P = 200 - Q$$

$$P = \frac{200 - Q}{20} = 10 - \frac{1}{20}Q$$

Rewrite S in y-intercept form:

$$20P = Q + 100$$

$$P = \frac{1}{20}Q + 5$$



$$\text{if } P = 5 \Rightarrow Q^D = 100$$

$$Q^S = 0$$

So if import quota = 120 $\Rightarrow P < 5$!
That means that domestic producers
Do not produce any sneakers!

So if $Q_{\text{dom}}^D = 120$ (the amount of import quota)

$$120 = 200 - 20P$$

$$80 = 20P$$

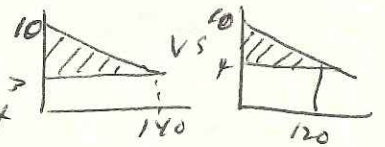
$$\$4 = P$$

answer (b) is TRUE

PS no quota = 0 } PS does not \Rightarrow answer (c) is False

PS w/ quota = 0

(d) CS \downarrow with import quota \Rightarrow This is TRUE statement



29.

$$DWL = \frac{1}{2}bh$$

$$= \frac{1}{2}(4-3)(140-120)$$

$$= \frac{1}{2}(1)(20) = \$10$$