

ECON 101 SOLUTION SET
MIDTERM 1

ECON 101 CCC
MIDTERM FALL 2017

instructor: K.L. Wiseman

Allotted Time: 85 minutes

25 QUESTIONS AT 4 MARKS EACH = 100 MARKS

NAME: Last Name, First Name _____

UBC Student #: _____

EXAM PROTOCOL

- DO NOT OPEN THE EXAM, TURN IT OVER OR LOOK INSIDE UNTIL YOU ARE TOLD TO BEGIN.
- Students can have a BASIC calculator (NO STORAGE) & writing instruments only.
- Students are required to leave all personal belongings -- including pencil cases, jackets, purses, backpacks, notes and cell phones on the floor by their desk OR at the front of the room.
- Once the exam starts, students should not leave the exam room until they have completed and handed in the exam. No leaving the classroom for bathroom breaks.
- Raise your hand if you have a question during the exam.
- If you are done early, call one of the TA's or the instructor and he/she will pick your exam up.
- No leaving the exam room in the last fifteen minutes of the exam.
- When the exam time has finished, stop writing and pass your exam to the aisle. During this time, you are still under exam conditions so please remain silent and seated at your desks.

WRITING THE EXAM INFORMATION

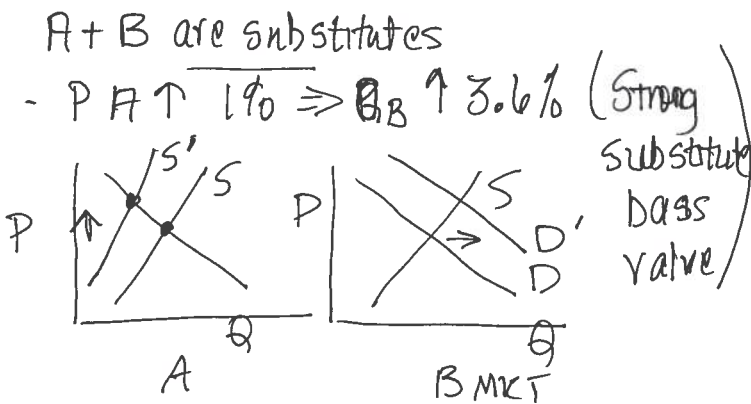
- Please write neatly.
- Business exams are quick exams so use **time management** to complete all pages.
- Keep your answers brief and to the point – use lists, outlines and point form where appropriate.
- Read questions carefully and answer the questions in the space provided.
- Explicitly state any assumptions you have made.

TERMS: Definitions of some common instruction words.

- Describe** Give details of processes, objectives, items included, properties, or connection to a concept.
Illustrate Give concrete examples – including graphs, formulas or diagrams to explain.
Explain Give detailed reasons for an idea, principle or result, situation or view. You may need to give some analysis.
Discuss Explain, give examples, points for and against, then analyze and evaluate the results.
Evaluate Similar to discuss, but with more emphasis on a judgement in the conclusion.
Outline Provide the main points plus a few details &/or examples to make the point clear and demonstrate your knowledge of the point. Not just a list!
Contrast Emphasize the differences between two terms, elements or concepts.

QUESTION 1

- a. Suppose the cross elasticity of demand for products A and B is +3.6 and for products C and D is -5.4. What can you conclude about how products A and B are related? Products C and D? Explain.



C + D are complements

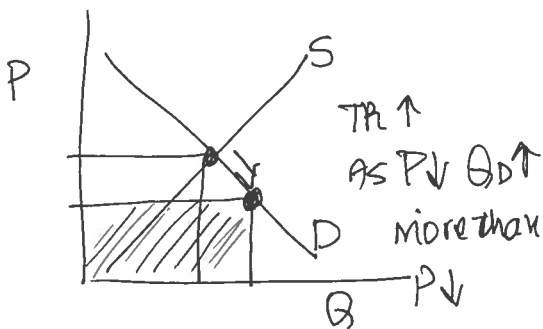
P_C ↑ ~~1%~~ ⇒ Q_D ↓ 5.4%

5.4 large effect implied

Lecture 6
Slide 54-57

- b. Why are environmental advocates concerned about retail clothing firms' use of the concept of price elasticity of demand? Note: an environmental advocate is a person who is dedicated to protecting and promoting the environment. Explain using the concept of elasticity. Graphs and examples are always a good idea.

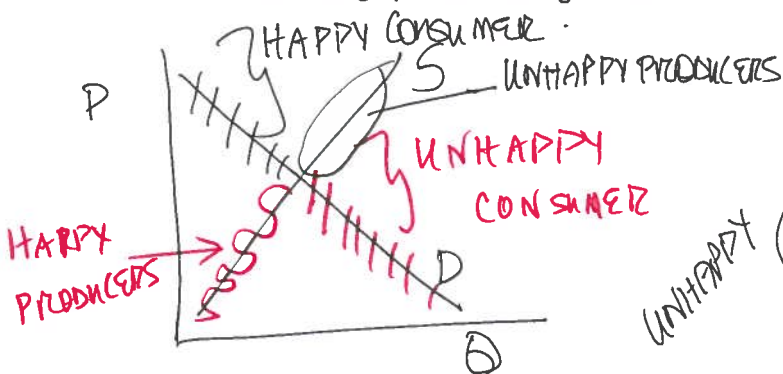
If P & Q relationship of clothes is defined as elastic
RETAILERS WILL ↑ P & ↑ TR because consumers ↑ Q



ENV. ADVOCATES CONCERNED
BECAUSE FIRMS NEED TO ↑ TR
DRIVES P ↓ (sales) & ↑ CONSUMPTION
- BAD FOR ENVIRONMENT

QUESTION 2

An efficient market means everyone is happy. True, False or Uncertain. Select your answer and explain your reason/s. A well-labelled graph would be a good idea.



AT MKT EQUIL
MAX CS, PS, & ES

BUT STILL, CONSUMERS IN MKT MAY WANT GOODS BUT CANNOT AFFORD IT
- PRODUCERS FIND MKT PRICE TOO LOW TO SUPPLY

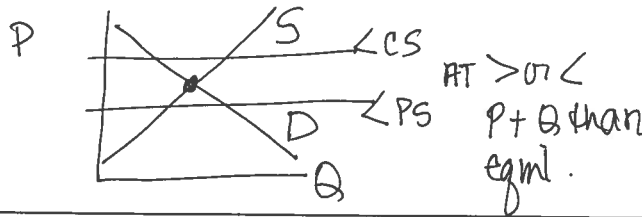
QUESTION 3

Use the ideas of consumer surplus and producer surplus to explain why economists say competitive markets are efficient. Why are below or above equilibrium levels of output inefficient, according to these two sets of ideas? Be sure to define the term efficiency, consumer surplus and producer surplus as part of your answer. Graphs and examples are always a good idea.

$CS = MB > \text{Price in Mkt}$

$PS = MC < \text{Price in Mkt}$

AT $MB = MC$ max potential $PS + CS$ created. Producing less than $EQUL$ or $> EQUL$ means surplus unrealized + ~~unrealized~~ resources that should be used elsewhere.



Lecture 7
Slides 34

QUESTION 4

The Canadian economy is closest to which of the following economic market systems?

- A. Mixed
- B. Pure Capitalism
- C. Pure Command
- D. None of the above

A

Lecture 2
Slides 15

Select your answer and then describe that economic market system (hint: factors of production ownership are one of the elements to include).

<u>ELEMENTS</u>	<u>MIXED</u>
FACTOR OF PRODN	- PRIVATE + SOME PUBLIC
GOOD + SERVICES	- FREELY PRODUCED / EXCHANGED
EXCHANGE	- \$ FOR EXCHANGE
CAPITAL & LABOUR	- MOVE FREELY ACROSS SECTORS TO >
PRICE	- ALLOCATES PROFIT
GOVT ROLE	- DEFENSE, TAX, REGULATION, CARE FOR VULNERABLE, ENVIRONMENT,

MAINLY INVISIBLE HAND WITH SOME INTERVENTION BY GOV'T

QUESTION 5

Given the following equation

$$Q_d = 124 - 4P \text{ and } Q_s = -16 + 3P$$

- a. What is the equilibrium price and quantity exchanged in this market? Show your work.

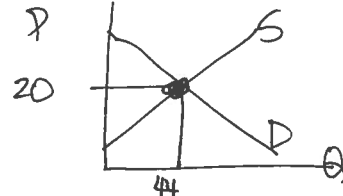
$$\text{SET } Q_d = Q_s$$

$$124 - 4P = -16 + 3P$$

$$140 = 7P$$

$$P = 20$$

$$Q = 44$$



- b. What is the value of the consumer surplus, producer surplus and economic surplus at market equilibrium? Show your work.

consumer surplus 198

producer surplus 322.74

economic surplus 520.74

$$Q_d = 124 - 4P$$

$$4P = 124 - Q_d$$

$$P = 31 - 0.25Q_d$$

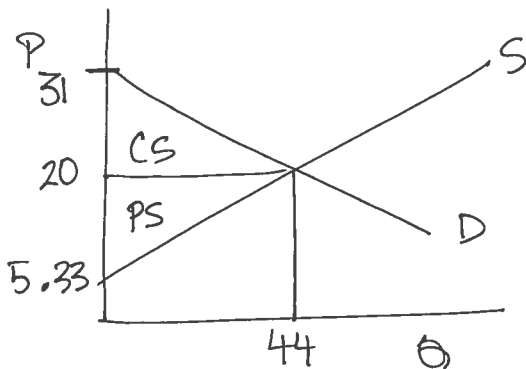
$$Q_s = -16 + 3P$$

$$Q_s + 16 = 3P$$

$$0.33Q_s + 5.33 = P$$

$$P = 5.33 + 0.33Q_s$$

- c. Show the market equilibrium and surpluses using a well-labelled graph (include correct intercepts).



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

$$= \frac{1}{2}(44)(31-20) = 198$$

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

$$= \frac{1}{2}(44)(20-5.33) = 322.74$$

- d. Outline 2 sources of market failure and explain the effects of market failure in a competitive market. Graphs and examples are always a good idea.

- P + Q REGULATION
- TAXES + SUBSIDIES
- EXTERNALITIES
- PUBLIC GOODS
- MONOPOLY
- HIGH TRANSACTION

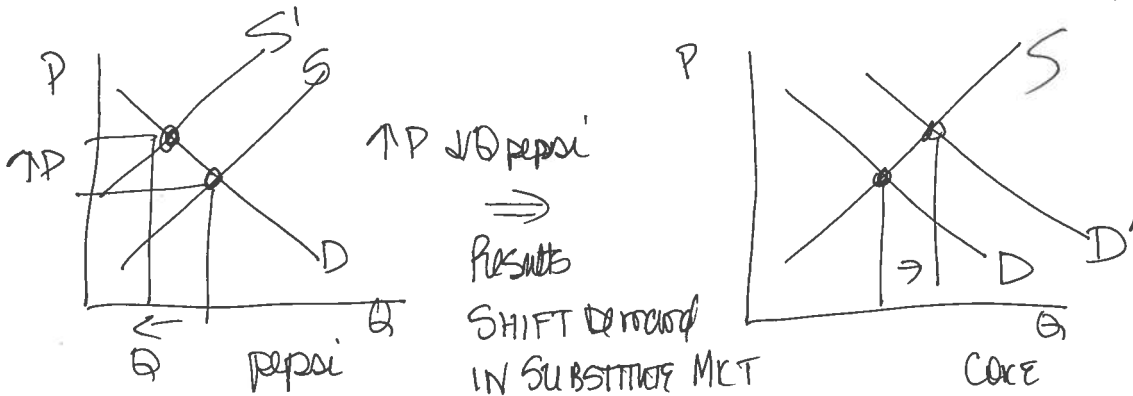
} ANY 2 of these

Lecture 7
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QUESTION 6

- a. If the price of Pepsi-Cola increases, we should expect the demand for Coca-Cola to increase. True or False. Select your answer and explain your reasoning. Be sure to use main economic concepts and at least 2 graphs!

Assume SUBSTITUTES (+) $P \uparrow$ Pepsi \Rightarrow THEN YES $P \uparrow$ Coke \Rightarrow $Q \uparrow$ Coke



- b. What are the income and cross elasticities of demand? Why might they be useful to business managers? Explain.

INCOME - INCOME \uparrow CAN INFLUENCE QD OF GOODS - NORMAL \uparrow
 - INFERIOR \downarrow

CROSS - $P_x \uparrow \Rightarrow Q_y \uparrow$ substitutes
 $P_x \uparrow \Rightarrow Q_z \downarrow$ complements

Relation of $P \uparrow \Rightarrow Q$

Useful to review - INCOME Δ effect on their firm's good.
 - $P \Delta$ on their good if substitute/complement

- c. Over the past three months, while the \$500 fare has been in effect, each of the two daily flights have averaged 10 passengers. During last summer, the carrier ran a sale and charged \$300 for a round-trip to Victoria; during the six weeks of the sale, the airline averaged 20 passengers per flight. What is the value of the price elasticity of demand? Explain the meaning of this value.

$P \Delta$ 500 \rightarrow 300 $\Delta P = 200$ AVG $P = 400$ $.5 = \% \Delta P$

$Q \Delta$ 10 \rightarrow 20 $\Delta Q = 10$ AVG $Q = 10$ $100\% = \Delta Q$

$E = \frac{\Delta Q}{\Delta P} = \frac{100}{.5} = 200$ $A 1\% \Delta P \Rightarrow 200\% \Delta Q \downarrow$

QUESTION 7

- a. Describe the rational spending rule and provide the equation. Explain how this is used by consumers in making choices.

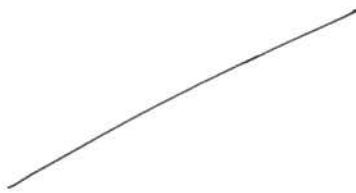
CONSUMER SPENDS ALL
AVAILABLE INCOME +
EQUALIZES MU / \$ OVER
all goods
L5 slide 23

$$MU_m / P_m = MU_x / P_x$$

SAME VALUE
ACROSS GOODS
IN ORDER TO
MAX UTILITY.

Lecture 5
Slide 23 →

- b. As discussed in class and on the video shown in class, Richard Thaler has just won the Nobel prize for Economic for his book Nudge. Explain how the theme of his book relates to consumer behavior.



- c. Using an example from your own life, explain the concept of utility and diminishing marginal utility and how they are useful in your own consumer choices.

- UTILITY = CONSUMER HAPPINESS

- MAX UTILITY CONSUMER GOAL

- DIMINISHING MU : AS CONSUMPTION
OF GOOD ↑

- ADDITIONAL UTILITY GAIN FROM
EXTRA UNIT TENDS TO ↓

EX 1st cookie

4th ✓

10th ✓

Lecture 5
Slide 12

QUESTION 8

- a. Illustrate the invisible hand concept in a market. Be sure to describe how this invisible hand is important in reaching market equilibrium.

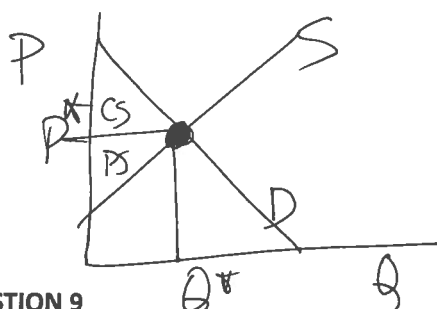
Lecture 2 Slide 22

Metaphor for marketplace

Consumer + producer focus on their own self interest (gain) + make decisions with self interest in mind.

This results in P+Q + efficient allocation of goods in the market - No excess / shortage + thus resources allocated efficiently

- b. What would an invisible hand in the market look like? Explain.



P+Q equil.

No intervention

Max ES, PS, CS + no DWL

QUESTION 9

- Why do people buy potato chips when they are on sale but not potatoes? Explain using economic concepts.

Elasticity Concept - measure of consumer (QD) response to P changes

If $P \downarrow \rightarrow Q_D$ potato chips large amt - elastic demand.
- very responsive

If $P \downarrow \rightarrow Q_D$ potato little amt - inelastic
- little response

Lecture 6 7

QUESTION 10

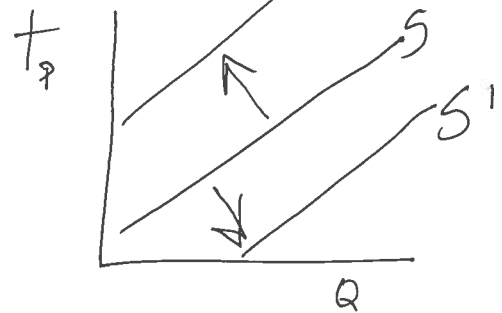
A friend of yours has decided to go into business selling ice cream bars and knowing you have taken Econ 101, asks for your advice.

- a. Your friend is interested in understanding supply in the market. Outline four factors that influence (shifters!) the supply of a good such as ice cream bars. Please use examples and a well-labelled graph.

Any 4 of these 6 factors:

- P of factors of production
- P of related goods
- expected future prices
- # of suppliers
- technology
- state of nature

+ Examples

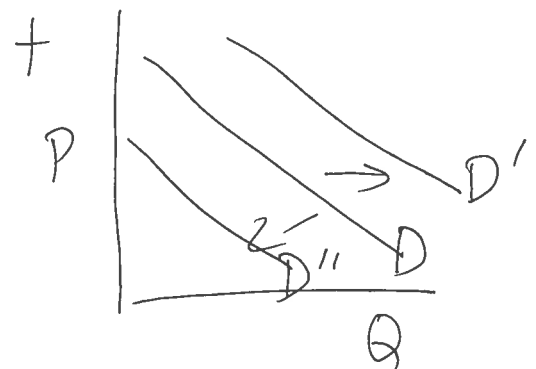


- b. Your friend is interested in understanding demand in the market. Outline four factors that influence (shifters!) the demand of a good such as ice cream bars. Please use examples and a well-labelled graph.

Any 4 of these 6 factors:

- P of related goods (substitute/complement)
- Exp. future P
- Income
- Exp. future income/credit
- Population
- Preferences/Tastes

+ EXAMPLES



c. Your friend is also interested in the relationship between price changes and total revenue for firms with elastic demand curves. Explain the elasticity and total revenue relationship. Use a well-labelled graph as part of your explanation.

$P \times Q = \text{Total Revenue}$

$E_D < 1$	$P \uparrow \quad TR \uparrow$ $P \downarrow \quad TR \downarrow$		PRICE STRATEGY \uparrow or \downarrow DEPENDS ON ELASTICITY - <u>SALE or NO SALE</u> Lecture Slide # 6 / 49
$E_D > 1$	$P \uparrow \quad TR \downarrow$ $P \downarrow \quad TR \uparrow$		

QUESTION 11

An efficient market implies an equitable market. True, False or Uncertain. Select your answer and explain your reason/s.

Efficient - MAX ES (PS+CS)
 - Resources allocated efficiently

Equitable - Fairness or equal allocation of surplus

Very different + efficient does not guarantee equity but having a efficient mkt mean > ability to \uparrow fairness

Lecture 7 Slide 75 \rightarrow

QUESTION 12

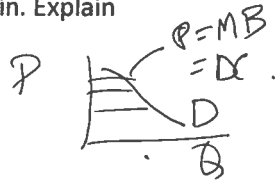
Describe one mathematical concept that could be considered "Math for Economics".

- Graphs - S+D
- $\% \Delta$ - Elasticity
- $P = \dots \rightarrow \Delta \text{ to } Q = \dots$ (via inverse)
- MC / Avg Cost / TC

QUESTION 13

The demand curve can also be referred to as the marginal benefit curve. True, False or Uncertain. Explain your answer using economic concepts and a well-labelled graph.

Demand Curve - Willingness to pay for product.



MB Curve - Marginal benefit is the amount of benefit gained from 1 extra unit consumed.

Thus, consumers will only pay a price that is $< a$ \Rightarrow to their MB they expect to get - so it is same as willingness to pay. Only willing to pay amt MB.

QUESTION 14

Contrast the following terms:

i. Total Utility and Marginal utility

TU: Utility that consumer derives from all their consumption activities

MU Additional utility gained from consuming an additional unit of a good.

ii. Consumer goals and Producer goals.

Consumer Max utility

Producer Max profit

Decide at margin