commerce
undergraduate
society

ECON 101 (GATEMAN)
FINAL EXAM REVIEW SESSION

BY COLIS CHENG

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Exam Tips and Strategies

1. **Assume Nothing!** 🌶️
   Gateman's patented catchphrase. What he is trying to emphasize here is detail. Never make any assumptions when answering questions. If something isn't obvious, state it! Detail > Concision

2. **Have faith in the scaling gods**
   These exams are designed to have raw averages below passing (< 50%). For the most part, you will generally see about a 20% increase in your raw score after scaling. **You don't need to do well on the exam to get a good mark**. Just hope your section has a low average >:). Though from my experience, the final is scaled less by about half the amount as the midterms (i.e. midterm was scaled 20%, final was scaled 10%)

3. **Bring a watch**
   This may be a bit obvious but time management is very important. The recommended times that are listed beside the question are HEAVILY suggested. When you pass that recommended time for the question, move on and come back later. If you spend 20 minutes on the first 5 definitions, you won't finish!

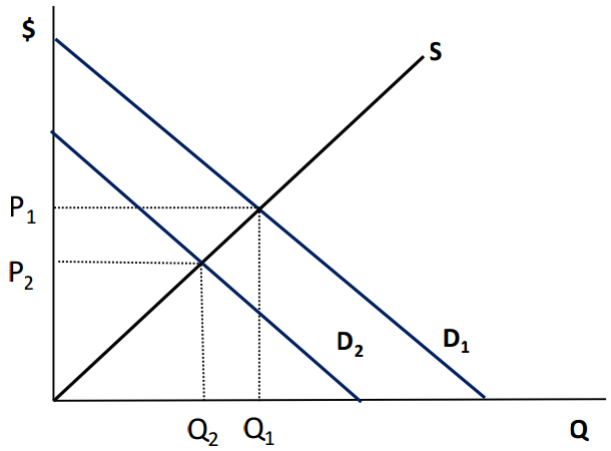
4. **Don't be surprised if you see content from Midterm 1 and 2**
   It is true that the majority of the final will be on content from chapters 12-16. However, everything from the start of the course is examinable material. From what I recall from my final last year, Gateman threw in questions from midterm 1 and 2 content. Don't waste your time rereading midterm 1 and 2 content if you can't.

5. **Don't stress too much**
   You've done the work, you've attended the CMP review session, you'll do great! Try to enjoy ECON 101 with Gateman as much as you can. He is an interesting professor and I firmly believe that you cannot graduate as a UBC BCOM without having him at least once!

COLIS' GATEMAN ECON 101 PRACTICE EXAM
(WITH DELICIOUS CRITICAL THINKING MOMENT QUESTIONS)

Multiple Choice Questions **(20 minutes)**

1. Consider the market for gasoline in Metro Vancouver as shown in the following diagram. Gasoline is a normal good. Which of the following events might have caused the shift in demand to the left (from D1 to D2)?



A. An increase in the price of gasoline.
B. An increase in the price of Ethanol, a substitute for gasoline.
C. A decrease in the price of hybrid cars (which use less gasoline than other cars).
D. An increase in the price of rapid transit.

2. Scarcity is correctly described by which of the following statements?

I. Scarcity exists if there are more uses for resources than can be satisfied at one time.
II. Scarcity exists if decisions must be made about alternative uses for resources.
III. Scarcity would not exist in a society in which people wanted to help others instead of themselves.

A. I only
B. II only
C. III only
D. I and II only
E. I, II, and III

3. Positive statements
A. have been verified by appeal to factual evidence.
B. are seldom employed in social sciences like economics
C. are falsifiable in principle by appeal to factual evidence.
D. form the basis of all normative arguments
E. have no place in economics because economics deals only with value judgments

4. Suppose that the quantity of beer demanded falls from 103,000 litres per week to 97,000 litres per week as a result of a 10 percent increase in its price. The price elasticity of demand for beer is therefore
A. 6.0, inelastic
B. Impossible to compute unless we know the before and after prices
C. 1.03, elastic
D. 1.97, elastic
E. 0.6, inelastic

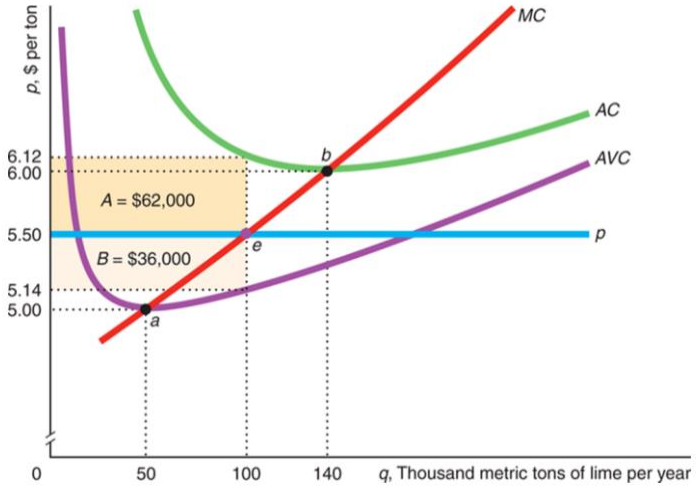
5. At any disequilibrium price, whether controlled or not, the quantity actually exchanged is determined by
A. the lesser of quantity demanded and quantity supplied.
B. the elasticity of demand
C. the elasticity of supply.
D. the greater of quantity demanded and quantity supplied.
E. government decree.

6. If X and Y are complementary goods, which of the following best represents a “feedback effect” resulting from a fall in the price of X?
A. the demand for X falls because the price of Y increase
B. the demand for Y increases because the price of X falls
C. the quantity of X demanded increases because the price of X falls
D. the demand for Y increases because purchasing power is increased by the fall in the price of X
E. Both (b) and (d); they both affect the market for Y through the fall in the price of X

7. At first the city’s fixed supply of water was sold at the market equilibrium price per litre. It then passed a law requiring that the water be provided free. This law
A. ensures that only households with the highest marginal values will consume water
B. ensures that all households will consume equal quantities of water
C. is likely to result in some households with a low marginal value of water getting water while others with a higher marginal value do not
D. would increase the total consumption value of water.
E. All of the above

8. You work as a marketing analyst for a pharmaceutical firm. A competing firm has a patent on a popular medication that currently sells for $20 per dose. Your firm is considering acquiring this rival and wants to determine whether the rival’s profitability can be increased by changing the price. You estimate the rival's current price elasticity of demand as -0.8 and believe that its demand curve is approximately linear. You also believe that its marginal cost is about 10. What conclusion should you draw?
A. Profit could be increased by raising the price.
B. Profit could be increased by lowering price.
C. The rival is maximizing profit.
D. Profits can be increased only if costs can be reduced.

9. The diagram shows the cost functions for a perfectly competitive lime manufacturing plant. The market price is $5.50 per thousand metric tons of lime. Select the correct statement.



A. At q=140 variable cost is less than total revenue.
B. The plant should produce q=140 to maximize profits.
C. There is no fixed cost of production.
D. The short-run supply curve is represented by the entire MC curve.

10. Game Theory Coke and Pepsi are deciding on advertising levels (low or high). The annual profits of the two firms from each combination of strategies they choose is given in the following payoff matrix. The first number in each cell is the profit for Coke. Which of the following statements is true?

		Pepsi	
		Low	High
Coke	Low	70,40	45, 55
	High	60,50	35, 35

A. There is a dominant strategy solution
B. There are multiple Nash equilibria
C. This is a prisoner's dilemma game
D. The Nash equilibrium that is achieved pays out the high total sum of profits
E. In the Nash equilibrium, Pepsi receives the higher payoff relative to its rival

11. Suppose that farmers decide individually whether or not to get their own cattle vaccinated against anthrax. Which of the following results?

A. There is market failure because the equilibrium quantity of vaccine is too low.

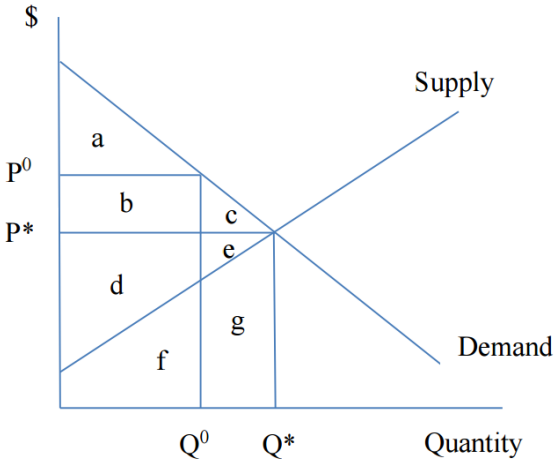
B. There is market failure because the equilibrium price of vaccine is too low.

C. There is market failure because both the equilibrium price and quantity of vaccine are too high.

D. There is no market failure because the market will tend toward equilibrium.

E. There is no market failure, although both the equilibrium price and quantity of vaccine are too high.

12. Federally regulated production quotas are used to restrict Canadian milk production to Q0 , which is below the competitive level, QC . This restriction in supply results in a market price P0 that exceeds the competitive price P*. When compared to the competitive market outcome this supply restriction:



A. Reduces deadweight loss.

B. Causes consumer surplus to fall by area b – c.

C. Raises producer surplus for farmers by amount b – e.

D. All of the above.

13. Consumption of a pure public good

A. depletes the supply of the good for others

B. increases the supply of the good

C. denies the opportunity to consume the good to others

D. excludes others from consuming the good somewhat E

E. neither depletes the good nor excludes others from consuming it

14. The most important reason cartels are illegal is probably that

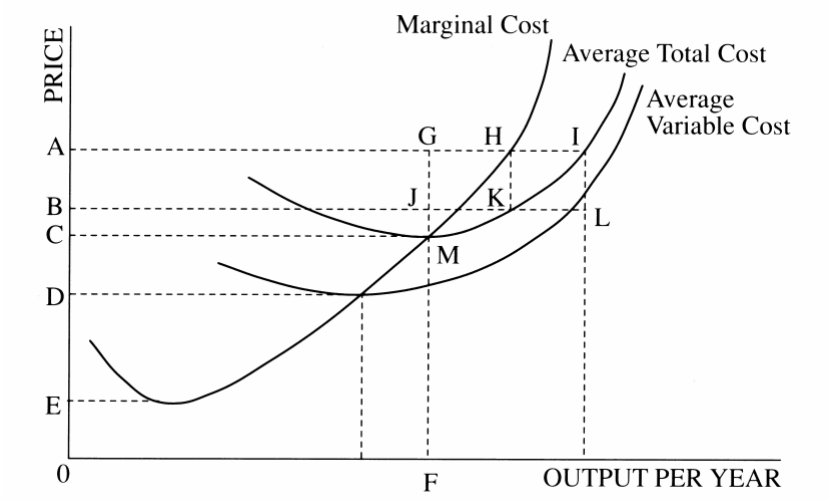
A. successful cartel makes more profit than a monopoly firm.

B. Cooperative agreements among firms are difficult to enforce.

C. Reduced competition among firms is often harmful to consumers.

D. The government does not like businesses to earn too much profit.

Questions 15 and 16 refer to the following diagram and assume a perfectly competitive market structure



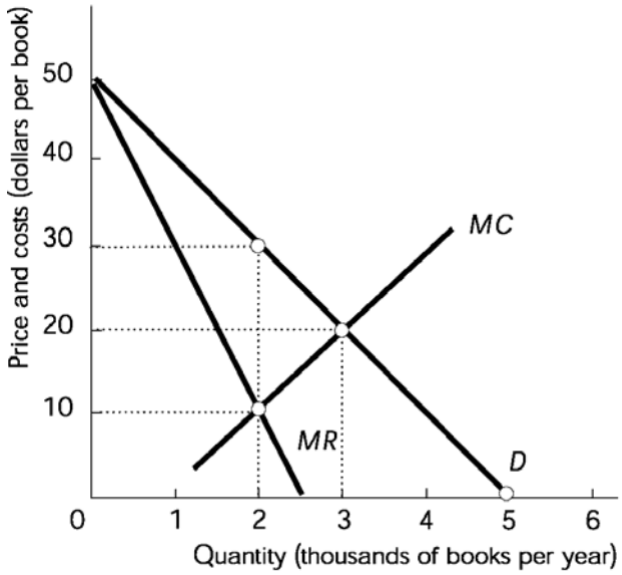
15. At price 0A, economic profits are
A. ABJG
B. ABKH
C. ABLI
D. ACMG
E. C0FM

16. In the short run, the firm will stop production when the price falls below
A. 0A
B. 0B
C. 0C
D. 0D
E. 0E

17. For a single-price monopoly, marginal revenue is _____ when demand is elastic and is _____ when demand is inelastic.
A. negative; positive
B. positive; positive
C. positive; negative
D. negative; negative

18. If a perfectly competitive industry becomes a monopoly and the costs do not change, which of the following allocation of costs and benefits applies?
A. The producer and society benefit, but consumers are harmed.
B. The producer and society are harmed, but consumers benefit.
C. The producer is harmed, but consumers and society benefit.
D. The producer benefits, but consumers and society are harmed.

19. Bob's Books is the only bookstore in town. The figure above shows the demand curve for books and Bob's Books' marginal revenue curve and marginal cost curve. Bob's Books maximizes its profit and sets the price of a book equal to _____ and has total annual revenue of _____.



A. $20, $60,000
B. $30; $60,000
C. $10; $40,000
D. $40; $40,000

20. Which of the following results when average-cost pricing is imposed on a monopoly?

A. Accounting profits become negative

B. Buying gold-plated water coolers for executives does not reduce profitability.

C. Allocative inefficiency in a natural monopoly but not in a regular monopoly.

D. The resulting allocative inefficiency generates negative economic profits.

e. Both a and d are correct.

Colis wants you to define the following five (10) terms precisely and concisely:

10 minutes

Market Structure

Characteristics of a market, such as the number and relative strength of buyers and sellers, levels and forms of competition, product differentiation, and ease of entry and exit into market

Non-Rivalrous Goods

A non-rival good is one that can be used or consumed by one person without reducing the amount left for others.

Maximization Principle

Optimizing profits through equating the values of marginal revenue and marginal costs.

Hurdle Pricing

A monopolist partitions the market, charging the reservation price for price sensitive buyers, and the monopoly price for all others.

Arbitrage

In price discrimination, consumers buy at a low price and re-sell at higher price

Sticky Prices

The resistance of a price (or set of prices) to change, despite changes in the broad economy that suggest a different price is optimal.

Pareto Dis-Improvement

Make someone worse off without affecting another

Collusion

Overt or covert agreement to cooperate

Natural Monopoly

Monopolies produced through a natural advantage: economics of scale

Invisible Hand

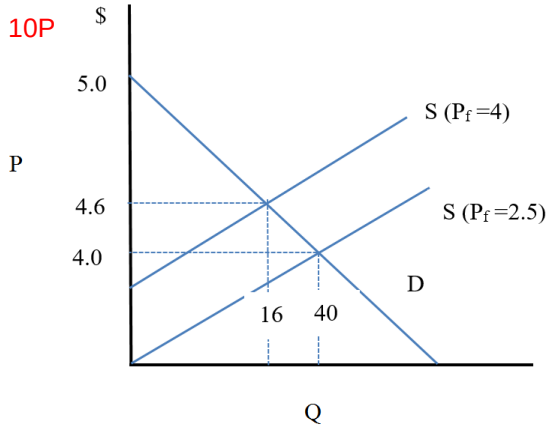
The unintended social benefits of individual actions

Analysis - Please answer the following four SHORT ANSWER questions.

20 minutes

1. The demand function for g-Pods at UBC is Q = 200 - 40P. The supply function Q = 50 + 10P - 20P_f where P_f is the price of g-Pens. How much do the price and quantity change if the price of g-Pens rises from $2.50 to $4.00? Illustrate this change in the diagram.

When P_f = 2.50, supply function Q = 50+10P - 20*2.5 = 10P
At equilibrium with P_f =2.5,
200 – 40P = 10P
P = $4.0
Q = 10*4 = 40
When P_f = 4, Q = 50 +10P – 20*4 = - 30 +10P
At equilibrium with P_f = 4,
200 – 40P = - 30 + 10P
P =$4.6
Q = - 30+10*4.6 =16

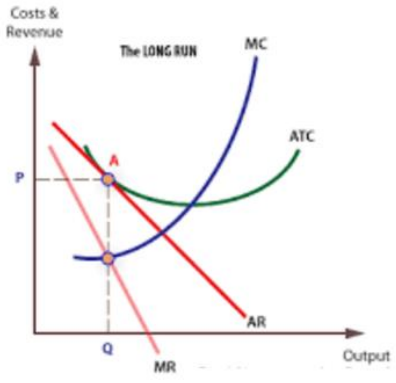


2. Your friend Colis does not understand the difference between perfect competition and monopolistic competition markets. Explain at least 3 differences and 3 similarities between these two market structures. Draw the graph for a monopolistic market in the long-run.

Example answers (there are more)

Difference

- Perfectly competitive firms are price takers, monopolistically competitive firms are price makers
- Perfectly competitive firms sell homogeneous goods, monopolistically competitive sell differentiated goods
- Perfectly competitive firms have horizontal demand curves, monopolistically competitive firms have downward sloping demand curves



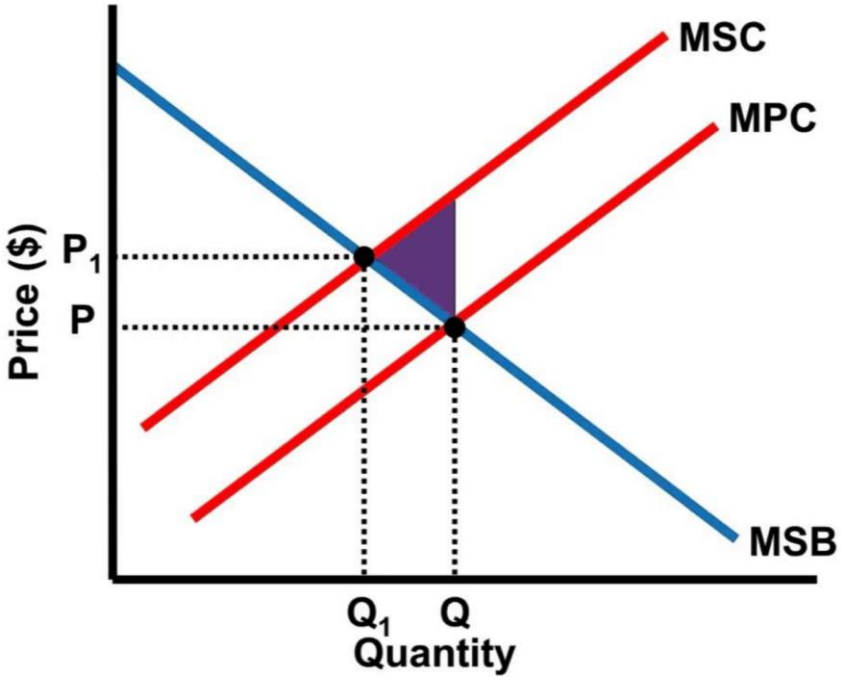
Similarities

- Both have many firms
- Ease of entry and exit
- Both earn zero economic profit in the long-run

3. *"Nuclear energy is god's gift to the world. We provide cheap energy to the thousands of citizens in our country. Nuclear energy is therefore great for society"*

– Mr. Burns (probably)

Is there a fallacy based on the logic behind this quote? Explain using a well-labeled.

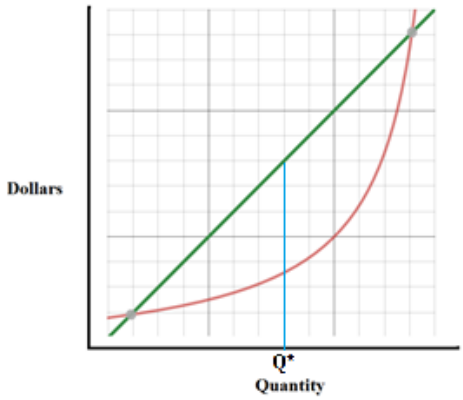


This is an incorrect statement. While it is true that the price of nuclear energy provides some sort of benefit to certain citizens, it is not true to say that it **benefits society.** Nuclear energy is an example of a negative externality. The waste products involved in producing it create an additional cost to society as a whole. As the diagram illustrated, the MPC (marginal private cost) is the cost that the power plant incurs while operating. However, because of the waste products, there is an additional cost to the environment. The sum of the costs to operations and to society become MSC (marginal social cost).

Will too much or too little nuclear power be produced? Explain.

Too much nuclear power will be produced. Without taxation, the nuclear plant will not internalize that costs they bear on society and will therefore overproduce.

4. The following is a graph representing a quantifiable characteristic of a perfectly competitive curve



What does the green line represent? The total revenue curve

What does the red line represent? The total cost curve

Based on this graph, is the firm operating in the short-run or long-run?

This firm is operating in the short-run. Since this firm is operating in a perfectly competitive market, it can earn zero economic profit in the long-run. Because the total revenue cost curve is above the total cost curve at the optimal quantity Q*, it is earning an economic profit. Therefore, it cannot be operating in the long run.

Answer only **ONE** of the following questions based your answer in the previous question?

a. If you chose short-run:

What adjustment in this graph will imply that this graph is operating in the long-run?

Since they are earning economic profit, more firms will enter the industry and therefore decrease prices. The economic profit will shift downward and become tangent to the total cost curve at Q*. Then this firm will be operating in the long-run.

b. If you chose long-run:

What adjustment in this graph will imply that this graph is operating in the short-run?

This question should not be answered

Analysis – Answer the following three LONG ANSWER questions

30 minutes

1. In the oligopoly market for chili peppers, there are two firms that compete for market share. As the following matrix shows, these are their payoffs given a certain marketing strategy.

Firm 1	Firm 2		
		Low	High
	Low	70,65	10, 40
	High	80, 20	30, 35

Is there a Nash Equilibrium solution? Is there a dominant strategy solution? Explain

There is a Nash Equilibrium when both firms price high, this is the best possible solution for each firm given the other firm's decision. There is no dominant strategy solution as only firm 1 has a dominant strategy.

Rewrite this game as a symmetric prisoner's dilemma game. The only cell that you do not change is when Firm 1 prices low and Firm 2 prices high. (Hint: there's more than one answer)

(A lot of different answers could work)

Firm 1	Firm 2		
		Low	High
	Low	**50** , **50**	10, 40
	High	40 , 10	**30**, **30**

Which outcome do you expect to happen? What is the Pareto Optimum and how will these 2 firms reach such an agreement?

You expect both firms to price high without communication. The Pareto Optimum is when both firms price low and these two firms will only reach such an agreement with communication.

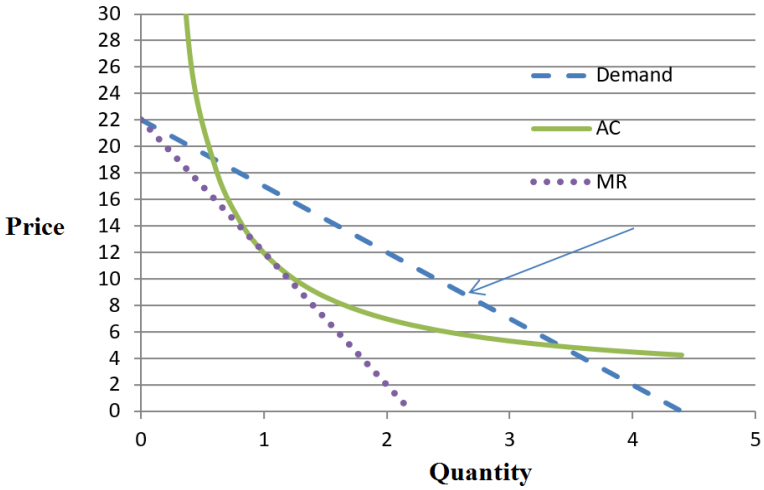
2. Through the use of adverse selection, explain how the market for lemons (junk cars) can cause market failures, inefficiencies, and deadweight loss.

   "Self-selection, within a single risk category, of persons of above-average risk." Essentially, adverse selection is a set of information that the seller knows but the buyer does not. For example, the seller knows it's a lemon, but the buyer does not. Buyers will not be able to differentiate between lemons and high quality cars and will therefore not be willing to pay the expected value for cars in the market, they will only pay at the price that lemons costs because they always assume they are buying a lemon. Sellers will be unwilling to supply high quality cars at the market price of lemons and will remove this supply of high quality cars from the market. This cause significant deadweight loss and market inefficiency because all the sales that could have happened with high quality cars are lost due to the presence of lemons.

   Colis is an academic consultant for the Commerce Mentorship Program. What is an example of a moral hazard in this situation? Explain

   "A moral hazard is a situation in which an individual or a firm takes advantage of asymmetrical knowledge while engaging in socially inefficient behaviour. "Colis will get paid a fixed amount regardless of **effort** or how well he teaches the first-years because effort adds a cost to Colis and he has a free choice between high and low effort. No one will be watching him at every second so he will choose to provide low effort because that increases his individual profit as he expends less of a cost to himself.

3. The following is are the monopolist demand curve, average cost curve, and marginal revenue curve for Professor Gateman's g-Book (since he is the only supplier of g-Books in the market).



For the profit maximizing professor (with a constant marginal cost of 2, calculate the following): (SHOW ALL WORK)

Profit:

Profit maximizer sets MC=MR to find optimal quantity. These curves intersect at q=2. However, since he is a monopolist, he will price at p=12. So to calculate his profit, it is Π=(P-ATC) *Q = (12 – 7) * 2 = $10

Deadweight Loss:

The profits not earned due to market structure. This is calculated as the area of the triangle that forms when quantity is greater than 2, below the demand curve, and above marginal cost.

DWL = $\frac{b*h}{2} = \frac{1}{2}$ (4-2) (12-2) = $10

If Professor Gateman is able to perfect price discriminate (which he probably is), what is the deadweight loss. Calculate total surplus after price discrimination and how it is split between consumers and producer.

If Professor Gateman perfectly price discriminates, he is able to charge each consumer perfectly by their respective willingness to pay. Deadweight loss becomes zero, but all surplus goes to the producer. Therefore, total surplus after price discrimination is maximized and is the area below the demand curve and above the marginal cost curve

TS = $\frac{b*h}{2} = \frac{1}{2}$ (4-0) (22-2) = $40.

Since all surplus goes to producers, the breakdown will be:

PS = $40 and CS = $0

ARTICLE QUESTION SAMPLE (20 MINUTES)

Trudeau approves Kinder Morgan pipeline, rejects one of two Enbridge projects

By Mike De Souza in News, Energy, Politics | November 29th 2016

The federal government has officially given the stamp of approval to two major pipeline projects in Canada, Kinder Morgan's Trans Mountain expansion and Enbridge's Line 3 pipeline. It has rejected the highly-controversial Enbridge Northern Gateway pipeline.

Trudeau made the announcement on Tuesday in Ottawa, prior to a meeting with Alberta Premier Rachel Notley, who has been urging the federal government to help its oil companies get access to new markets by approving pipelines.

The decisions by his cabinet open the door to Enbridge Inc.'s Line 3 replacement project, described as the biggest in the Calgary-based company's history, and Kinder Morgan's Trans Mountain expansion, described by a federal panel as being among the most "controversial in the country, perhaps in the world, today."

"Canadians know that strong action on the environment is good on the economy," Trudeau said during a press conference, flanked by five cabinet ministers. "We said that major pipelines could only get built if we had a price on carbon and strong environmental protection in place. We said Indigenous people must be respected and part of the process."

It was using this framework of understanding, he explained, that his cabinet decided to approve the projects.

Line 3 would allow western oil producers to ship up to 760,000 barrels of oil per day from Alberta to the U.S. midwest, doubling the capacity of the existing line that is now facing pressure restrictions for safety reasons. Canada's National Energy Board recommended in April that the government approve the Line 3 replacement project with 89 conditions.

The Trans Mountain expansion (TMX) would triple the capacity of an existing pipeline network that links the Edmonton and Vancouver regions, shipping roughly 890,000 barrels of crude oil and petroleum per day. The NEB recommended that project for approval in May, along with 157 environmental, financial and technical conditions.

"If I thought this project was unsafe for the B.C. coast, I would reject it," he said of the TMX approval. "This is a decision based on rigorous debate, on science and on evidence. We will not be swayed by political arguments."

Pipelines to produce major emissions

The joint announcement about Line 3 and TMX is likely to provide some political cover for Notley and Trudeau who have been blamed by Alberta opposition politicians for the slumping global oil prices that have hammered the province's economy, triggering tens of thousands of job losses. At the same time, the approval of a new pipeline is likely to draw detractors from some members of the environmental community who have been urging rejection of all new pipelines.

"I want to thank Prime Minister Trudeau and his government for approving these energy infrastructure projects, which are critically important to the economic future of the people of Alberta," said Notley in a press statement after the announcement. “We are getting a chance to break our landlock. We're getting a chance to sell to China and other new markets at better prices.

We're getting a chance to reduce our dependence on one market, and therefore to be more economically independent. And we're getting a chance to pick ourselves up and move forward again. Of equal importance, we are building the economy within a strong new national environmental policy."

Environment Canada officials have estimated Line 3 would add as much as 26 million tonnes of annual heat-trapping carbon pollution into the atmosphere. This would be equivalent to the annual pollution of more than six million cars on the road. Trudeau said the project can proceed without compromising Canada's climate change goals, but he has not yet produced a complete plan to explain how the country can do this.

The TMX pipeline is expected to generate more than one million tonnes of emissions annually, but will likely be required to quantify and the direct emissions after construction and offset them, as recommended by the NEB.

Trudeau has scheduled a meeting with provincial and territorial premiers on Dec. 9 to discuss further details of a national climate change plan. His government has already introduced a series of policies, including plans to make polluters pay for carbon emissions and proposals to regulate fuels used for transportation and buildings.

Northern Gateway rejected, tanker ban announced

In the meantime some economists have cast doubts about estimates from industry that suggest new pipelines would help promote growth in the oilsands sector, which is struggling to compete because it has higher production costs and a larger environmental footprint than more conventional forms of oil.

Trudeau, who has long been opposed to Enbridge's Northern Gateway pipeline, rejected that project, which would have gone through a pristine ecosystem on the west coast of

B.C., known as the Great Bear Rainforest. This project had been thrown into limbo following a Federal Court of Appeal decision last June which found that the permits issued by the former Harper government were invalid because it had failed to adequately consult with First Nations.

He also delivered on a federal tanker ban for crude oil tanker's on B.C.'s north coast that will be translated into formal legislation in the coming months.

"The Great Gear Rainforest is no place for a pipeline and the Douglas Channel is no place for tankers," he told reporters.

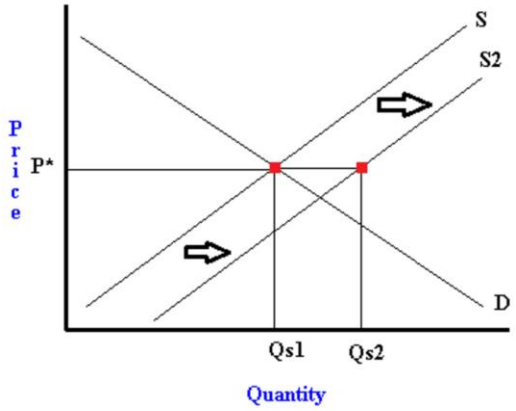
But the approval of Line 3 is good news for Calgary-based Enbridge, which has been criticized in recent years following major oil spill disasters in 2007 on Line 3 in Glenavon, Sask. and on Line 6B in 2010 in Marshall, Michigan. Regulators said Enbridge failed to stop these disasters from happening because it was having trouble monitoring and repairing pipeline cracks that formed from corrosion. The company has said it has made improvements since these spills.

"The learnings from our experience have made us a better company and the way we think about safety has changed," said Enbridge president and chief executive Al Monaco in a statement, following a US$177 million settlement reached in July with the U.S. government for the Marshal spill and another in Romeoville, Illinois in 2010. "Over the past six years, we've intensified our focus on the safety and integrity of our systems enterprise-wide and we've invested significantly in our people, processes, equipment and technology. Across Enbridge, our team is galvanized by our number one priority of safety and reliability of our systems and the protection of the public and the environment."

The energy company must still gain U.S. approval from Minnesota if it wants to proceed with the Line 3 project to modernize, widen and increase the capacity of the line that runs between Hardisty, Alta. and Superior, Wisconsin. It would also allow the company to avoid the pressure restrictions on its existing line that have been imposed for safety reasons.

Analysis – Answer the Following Questions Clearly and Concisely

1. Show how the presence of Line 3 has an effect on the market for oil in the United States in a well labelled graph. Explain the effects on price and quantity.

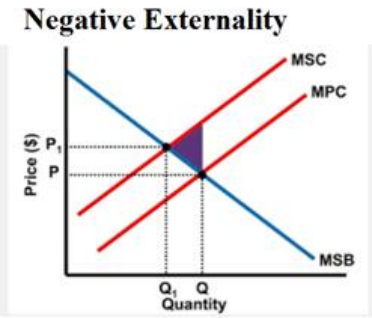


The supply for oil in the United States will increase and will therefore shift the supply curve rightward. This will increase equilibrium quantity and decrease equilibrium price.

2. What kind of impact will this additional oil have on the United States perfectly competitive (in this example) market for oil? Explain in terms of average costs, demand, price, and quantity.

Recall that the supply curve is also the marginal cost curve for a market above the average variable cost. Therefore, the marginal cost curve shifts outward. However, **because the marginal cost curve intersects the average cost curve at the minimum, the ATC curve will also shift rightward.** Demand remains unchanged, but the price will decrease while quantity increases (like in question 1).

3. What kind of social impact would the construction of Line 3 have on Canada? Explain in a well labelled graph.



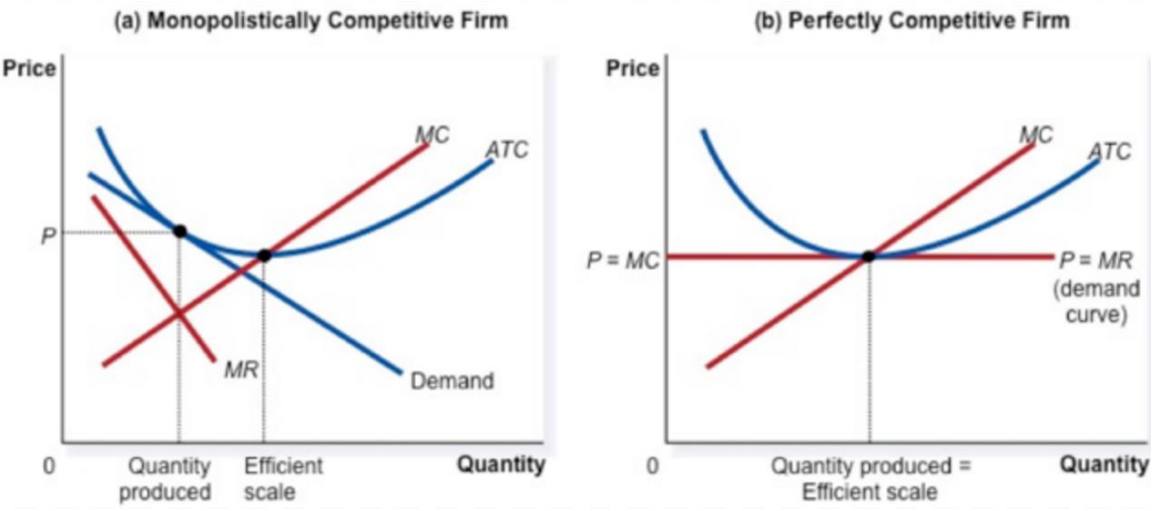
This is an example of a negative externality. As stated in the article, "Line 3 would add as much as 26 million tonnes of annual heat-trapping carbon pollution into the atmosphere".

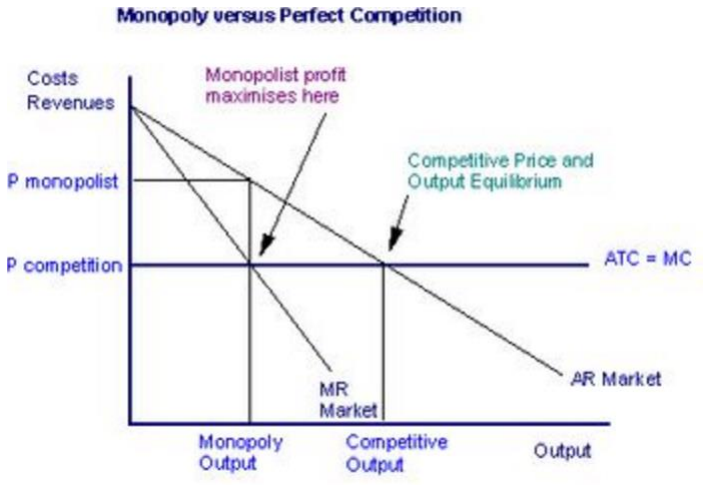
4. Is there a way in which the social cost/benefit can be internalized/encouraged?

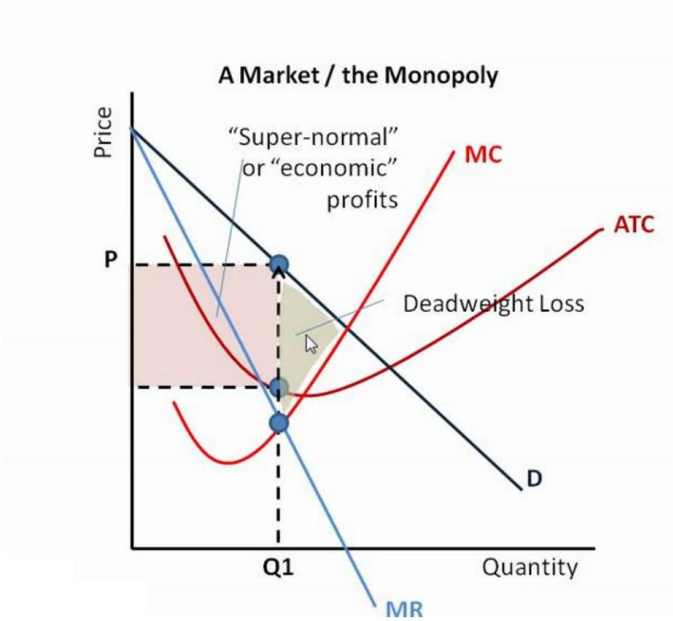
While normally externalities can be controlled in some way with government intervention, this particular example cannot be controlled. The Canadian government will hire external government contractors to build this pipeline and therefore the construction of this pipeline is a function of the government. It cannot be taxed/output cannot be restricted to internalize the negative externality.

KEY GRAPHS AND CHARTS CH.9-16

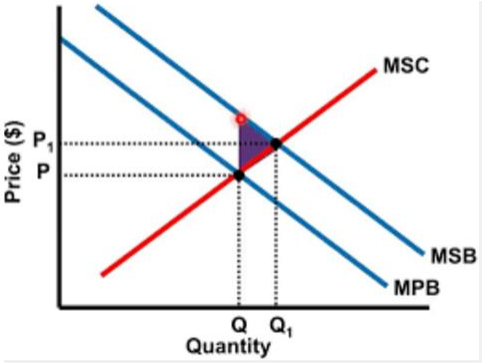
Type of Market	Number of firms	Freedom of entry	Nature of Product	Implications for demand curve faced by firm	Average size of firm	Possible consumer demand	Government intervention	Example
Perfect Competition	Very Many	Unrestricted	Homogeneous (undifferentiated)	Horizontal: Price Taker	Many Small Stores	Remains constant	None	Starbucks
Monopolistic Competition	Many/Several	Unrestricted	Differentiated	Downward Sloping, but relatively elastic	Many Small Stores	Low	Yes, Government Law or regulation	Home Contactor
Oligopoly	Few	Restricted	Either	Downward slope, relatively inelastic	Few Large Firms	Demand Equals Supply	None	General Motors
Monopoly	One	Restricted or Completely blocked	Unique	Downward slope, more elastic than oligopoly with control over price	One Big Firm	Very High	Yes with Taxes	Utilities Company



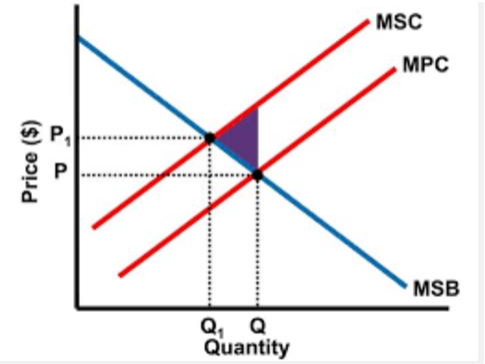




Positive Externality



Negative Externality



	Excludable	Non-Excludable
Rival	**Private Goods** "Typical Goods" (Clothes, Food, Flowers, etc.)	**Common Goods** "Common Pool Resources" (Mines, Fisheries, Forests, etc.)
Non-Rival	**Club Goods** "Artificially Scarce Goods" (Cable TV, Private Parks, Cinemas, etc.)	**Public Goods** "Collective Goods" (Air, News, Sunshine, etc.)