Kait-lo

Microeconomics Unit 1: Basic Economics Concepts

Key Terms- Define the following:

1. Scarcity
Individuals, businesses, and governments have unlimited wants but limited resources.
2. Consumer Goods vs. Capital Goods
Consumer goods- (ex: pizza) goods made for direct consumption
Capital goods- (ex: restaurant oven) goods made for indirect consumption. Goods that make consumer goods
3.Trade-offs
ALL possible options given up when you make a choice
4. Opportunity Cost
The ONE best option given up when you make a choice including the money, time, and forgone opportunities.

3 Economic Systems

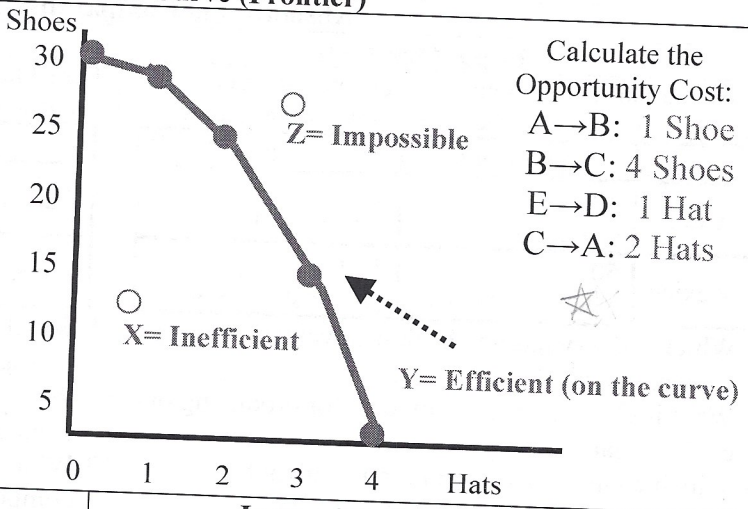
1. Centrally Planned Economies
Economic system where the government owns the resources and decides what to make, how to make it, and who gets it. Total government control of the economy
2. Free-Market Economies (Capitalism)
Economic system where individual citizens own the resources and decides what to make, how to make it, and who gets it. Little or no government involvement in the economy
3. Mixed Economies
Almost all economies are a mixture of the above systems.

Production Possibilities Curve (Frontier)

Use the chart to create a PPC to the right.

	A	B	C	D	E
Hats	0	1	2	3	4
Shoes	30	29	25	15	0

Label the following three points on the graph:
X= Unemployment/Inefficiency
Y= Efficient
Z= Impossible given current resource

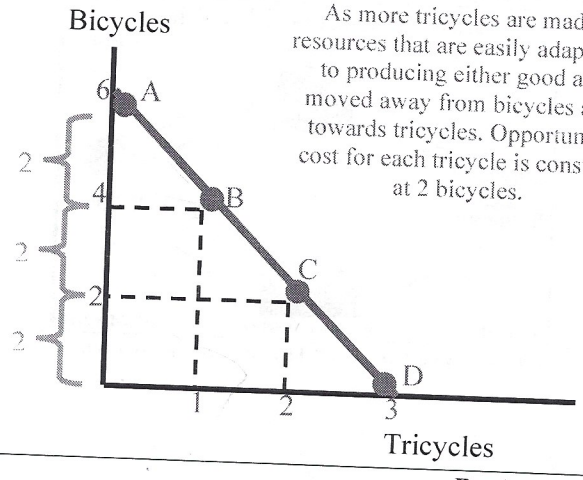


Calculate the Opportunity Cost:
A→B: 1 Shoe
B→C: 4 Shoes
E→D: 1 Hat
C→A: 2 Hats

Constant Opportunity Cost

Why does this occur? Resources are easily adaptable between both products.

Draw the graph below

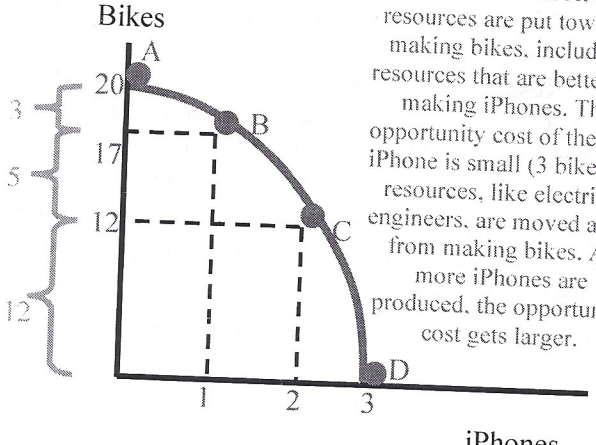


As more tricycles are made, resources that are easily adaptable to producing either good are moved away from bicycles and towards tricycles. Opportunity cost for each tricycle is constant at 2 bicycles.

Increasing Opportunity Cost

Why does this occur? Resources are not easily adaptable between both products

Draw the graph below



At combination A, all resources are put towards making bikes, including resources that are better for making iPhones. The opportunity cost of the first iPhone is small (3 bikes) as resources, like electrical engineers, are moved away from making bikes. As more iPhones are produced, the opportunity cost gets larger.

* only in pc market have both efficience

Please do not post online. Not for classroom use.

Efficiency

Difference between allocative and productive efficiency:

Productive Efficiency- Products are being produced in the least costly way (any point ON the curve) min ATC

Allocative Efficiency- The products being produced are the ones most desired by society. *Optimal* point depends on the desires of society. P=mc

Shifting the PPC

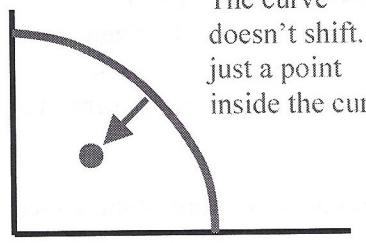
Identify the three shifters of the PPC

1. Change in resource quantity or quality
2. Change in Technology
3. Change in Trade (Doesn't change the amount they can produce, but it does change the amount they can consume)

Production Possibilities Practice (draw 3 PPCs with pizza and cars)

Scenario: Workers loose their jobs due to a recession

Pizza

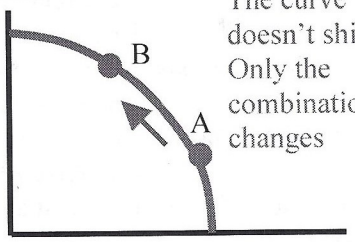


The curve doesn't shift. It is just a point inside the curve

Cars

Scenario: Increase in consumer demand for pizza

Pizza

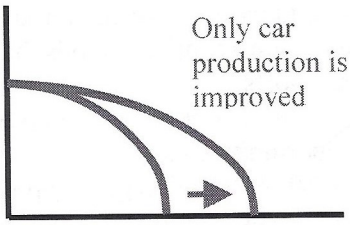


The curve doesn't shift. Only the combination changes

Cars

Scenario: More resources that improve the production of cars

Pizza



Only car production is improved

Cars

Absolute and Comparative Advantage

Output Questions

The table shows the amount of sugar and cars each country can make with the same number of resources

	Sugar (tons)	Cars
Cuba	40 (1S costs ¼ Car)	10 (1C costs 4 Sugar)
Mexico	50 (1S costs 2 Cars)	100 (1C costs ½ Sugar)

1. Which country has an absolute advantage in sugar? How about cars? Mexico/Mexico
2. What is Cuba's opportunity cost for producing one car? 4 sugar
3. Which country has a comparative advantage in cars? How about sugar? Mexico/Cuba
4. For both countries to benefit from trade, how much sugar can be traded for each car? 1 Car for __1__ Sugar (any number between 4 and ½)

Input Questions

The table shows the number of hours it takes to produce a ton of sausage and a ton of computers

	Sausage	Computers
Canada	2 (1S costs 1/3 comp)	6 (1C costs 3 sausg)
UK	10 (1S costs 1 comp)	10 (1C costs 1 sausg)

1. Which country has an absolute advantage in sausage? How about computers? Canada/Canada
2. What is Canada's opportunity cost for producing one computer? 3 sausage
3. Which country has a comparative advantage in computers? How about sausage? UK/Canada
4. For both countries to benefit from trade, how many sausages can be traded for each computer? 1 comp for __2__ sausage (any number between 3 and 1)

Circular Flow Matrix (Model)

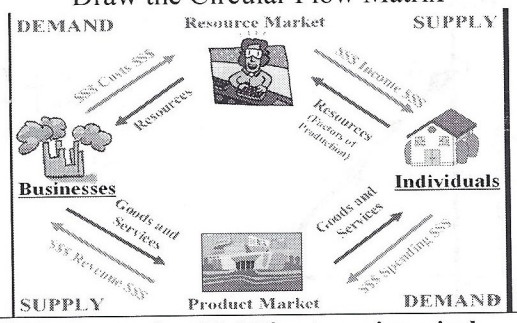
Product Market- Places where individuals buy goods and services from businesses

Factor (Resource) Market- Places where businesses buy the factors (land, labor, capital) from individuals

Factor Payments- Payments made by businesses. Rent for land, wages for labor, interest for capital

Transfer Payments- Payments made by the government to meet a specific goal rather than pay for goods and services (ex: welfare)

Draw the Circular Flow Matrix



Did you pay for this? If not, you're a jerk

oppantis

people aggriest you

2

graph surplus utity

People that put this online are jerks

Microeconomics Unit 2: Demand, Supply, and Consumer Choice

Demand

The Law of Demand:
Inverse relationship between price and quantity demanded

P↑ Qd __↓_
P↓ Qd __↑_

Supply

The Law of Supply:
Direct relationship between price and quantity supplied

P↑ Qs _↑__
P↓ Qs _↓__

What is the different between a change in quantity demanded and a change in demand?

A change in quantity demanded is movement along the curve due to a change in price. A change in demand is when the entire demand curve shifts left or right due to a change in one of the shifters

Changes in Demand and Supply (Shifting the Curve)

What changes demand? (5 Shifters of Demand)

1. Tastes and preferences
2. Number of consumers
3. Price of related goods- Substitutes and complements
4. Income
5. Future expectations

What changes supply? (5 Shifters of Supply)

1. Prices/availability of inputs (resources)
2. Number of producers
3. Technology
4. Government action: taxes & subsidies
5. Expectations of future profit

Substitutes: Price of A↑ Demand for B __↑_
Price of A↓ Demand for B __↓_

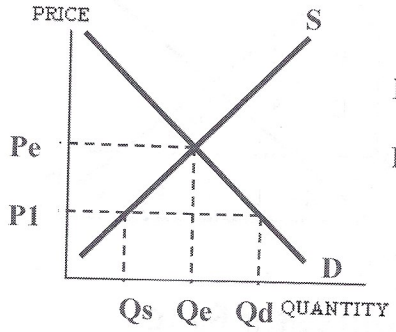
Complements: Price of A↑ Demand for B __↓_
Price of A↓ Demand for B __↑_

Normal Goods: Income ↑ Demand ___↑_
Income ↓ Demand ___↓_

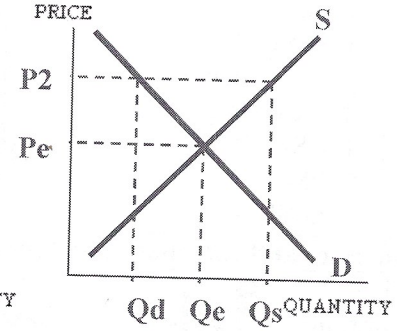
Inferior Goods: Income ↑ Demand ___↓_
Income ↓ Demand ___↑_

Equilibrium and Disequilibrium

Draw a shortage



Draw a surplus



Government Involvement

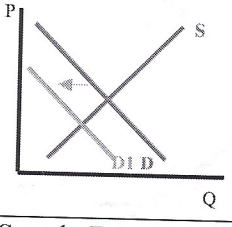
Price Ceiling- Legal cap on prices designed to keep prices artificially low
When binding, ceilings go _below__ equilibrium and result in a shortage.

Price Floor- Minimum legal price sellers can sell a product
When binding, floors go __above_ equilibrium and result in a surplus.

Subsidy- Government payment to producers designed to encourage them to produce more

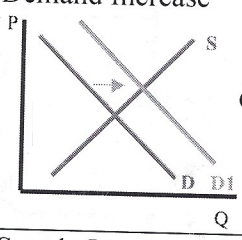
Supply and Demand Practice

Demand Decrease



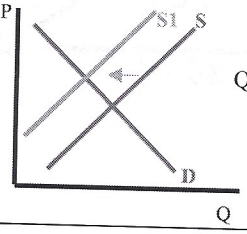
Price _↓_
Quantity _↓_

Demand Increase



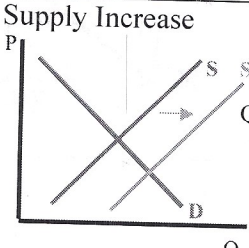
Price _↑_
Quantity _↑_

Supply Decrease



Price _↑_
Quantity _↓_

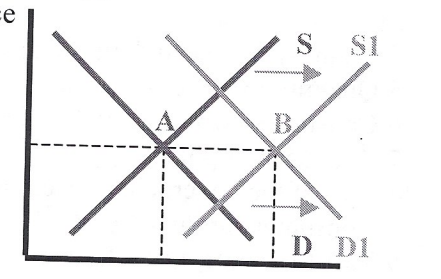
Supply Increase



Price _↓_
Quantity _↑_

Double Shift Practice

If demand increases AND supply increases then price _indeterminate_ and quantity __increases__



Double Shift Rule: If TWO curves shift at the same time, EITHER price or quantity will be indeterminate.

Thanks for supporting Jacob Clifford and ACDC Econ!

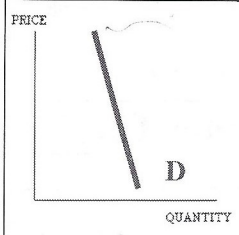
Fut pc ↑ D ↑

fut pc ↑ Supply ↓

3

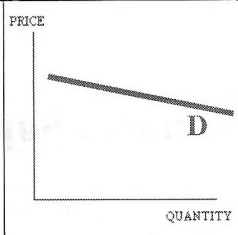
People that put this online are jerks

Inelastic Demand



Characteristics
1. Necessity
2. Few Substitutes
3. Elasticity coefficient less than 1

Elastic Demand



Characteristics
1. Luxury
2. Many Substitutes
3. Elasticity coefficient greater than 1

Total Revenue Test

Inelastic Demand
Price ↑, TR __↑__
Price ↓, TR __↓__
Elastic Demand
Price ↑, TR __↓__
Price ↓, TR __↑__

Elasticity of Demand Coefficient

Equation- $\frac{\text{Percent change in quantity demanded}}{\text{Percent change in price}}$ $\frac{Q_2 - Q_1}{Q}$

Perfectly Inelastic = **0**
Relatively Inelastic = **Less than 1**
Unit Elastic = **1**
Relatively Elastic = **Greater than 1**
Perfectly Elastic = ∞

Elasticity of Supply Coefficient

Equation- $\frac{\text{Percent change in quantity supplied}}{\text{Percent change in price}}$ $\frac{P_2 - P_1}{P_1}$

Perfectly Inelastic = **0**
Relatively Inelastic = **Less than 1**
Unit Elastic = **1**
Relatively Elastic = **Greater than 1**
Perfectly Elastic = ∞

Cross-Price Elasticity of Demand

Definition- Shows what happens to one product when the price changes for a different product
Equation- $\frac{\text{Percent change in quantity of product A}}{\text{Percent change in price of product B}}$
Positive: _Substitute_ Negative: _Complement_

Income Elasticity of Demand

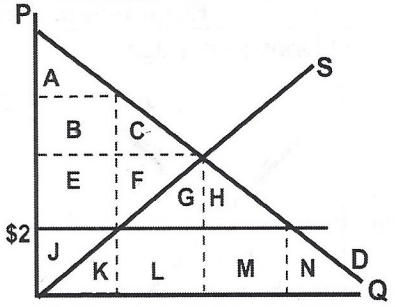
Definition- Shows what happens to a product when there is a change in income
Equation- $\frac{\text{Percent change in quantity}}{\text{Percent change in income}}$
Positive _Normal good_ Negative _Inferior good_

Consumer Surplus (CS) and Producer Surplus (PS)

Consumer Surplus (CS)- Difference between how much people are willing to pay and the price they do pay
Producer Surplus (PS)- Difference between the price and how much the seller is willing to sell the product for
Deadweight Loss (DWL)- Lost efficiency when the optimal quantity is not being produced

Identify at equilibrium
1. CS- ABC
2. PS- EFJ
3. DWL- None

Identify when there is a price ceiling at $2
4. CS- ABE
5. PS- J
6. DWL- CF

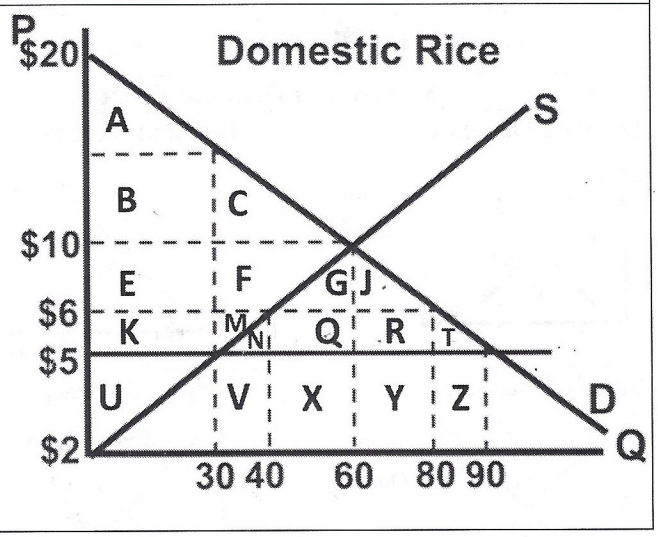


Welfare Economics and International Trade

The graph shows the domestic market for rice.
Identify and calculate the following at equilibrium
1. Consumer surplus- ABC = $300 = ($10 x 60)/2
2. Producer surplus- EFKMU = $240
3. Total surplus- ABCEFKMU= $540

Identify the following if this country buys rice from other countries for $5
4. Quantity produced domestically- 30 units
5. Quantity imported- 60 units = (90 – 30)
6. Consumer surplus- ABCEFGJKMNQRT
7. Producer surplus- U

Identify if the government places a tariff of $1
8. Consumer surplus- ABCEFGJ
9. Tariff revenue- QR = $40 ($1 x 40 units)
10. Deadweight Loss- NT



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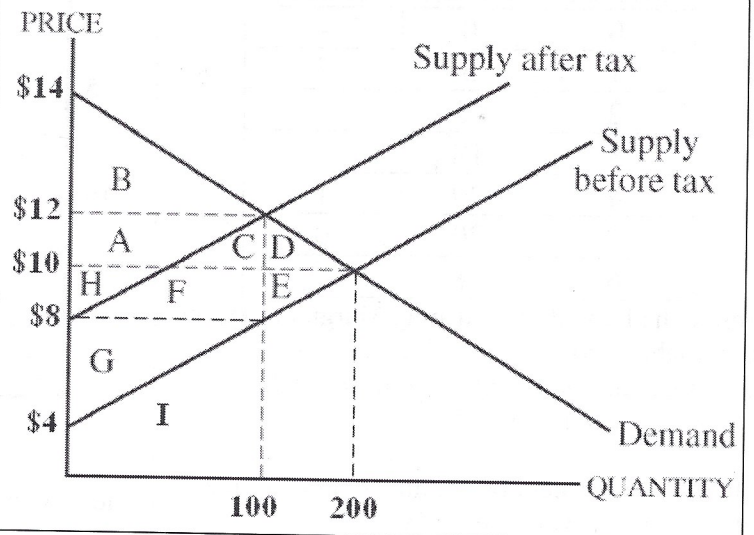
Excise Tax Practice

Before tax

1. CS before tax: BACD
2. PS before tax: GHFE

After Tax

3. Tax per unit: $4 Per Unit
4. CS after tax: B
5. PS after tax: G
6. Dead weight loss: DE
7. Total tax revenue to gov: ACHF
8. Total spending by buyers: ACHFGI
9. Total revenue to sellers: GI
10. Total amount of tax buyer pay: AC
11. Total amount of tax sellers pay: HF
12. Is the demand curve between $12 and $10 elastic, inelastic, or unit elastic?
Elastic. Price fell and total revenue went up



Consumer Choice and Maximizing Utility

Utility Maximizing Rule:

$$\frac{\text{Marginal Utility A}}{\text{Price of A}} = \frac{\text{Marginal Utility B}}{\text{Price of B}}$$

You can choose any combination of two different activities, the movies ($10) or riding go carts ($5).

1. If you only have $25, what combination maximizes your utility? **2 movies and 1 go cart because you pick the one that gives you the most additional utility per dollar until all the money is spent.**
2. What combo is best if you have $40?
3 Movies and 2 Go Cart

# Times Going	Marginal Utility (Movies)	MU/P	Marginal Utility (Go Carts)	MU/P
1st	30	3	10	2
2nd	20	2	5	1
3rd	10	1	2	.4
4th	5	.5	1	.2

3. What is the total utility from consuming 3 movies and 2 go carts? 75 utils = 30+20+10+10+5

...on second thought, don't punch them. E-mail me their name and address. I'll take care of it.

Unit 3: Costs of Production and Perfect Competition

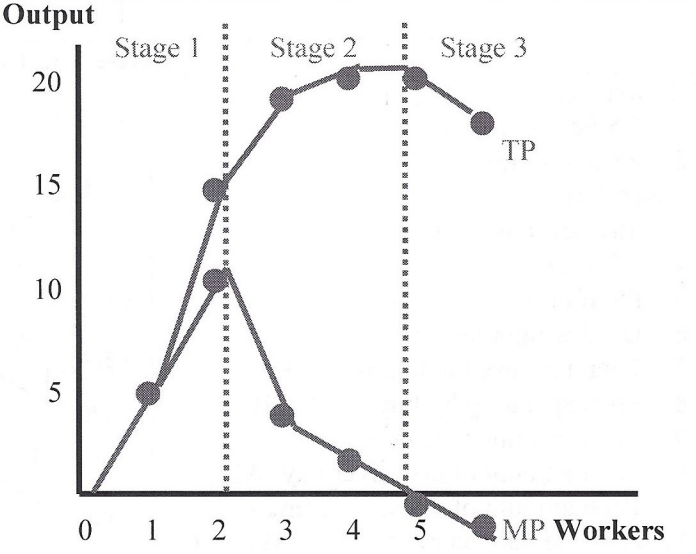
Production and the Law of Diminishing Marginal Returns

Calculate MP. Plot TP and MP on Graph

Number of Workers	Total Product	Marginal Product
0	0	-
1	5	5
2	15	10
3	19	4
4	20	1
5	20	0
6	18	-2

Define the Law of Diminishing Marginal Returns
As variable resources are added to fixed resources, the additional output from each new worker will eventually fall.

After which worker does diminishing marginal returns set in? After the 2nd Worker



Identify the three stages of returns: increasing, decreasing, and negative marginal returns

Revenue and Costs (Define the following)

Total Revenue-
Price x Quantity

Accounting Profit-
Total Revenue – Explicit Costs

Economic Profit-
Total Revenue – Explicit and Implicit Costs

Normal Profit-
Zero Economic Profit (breaking even)

Fixed Cost (FC)- Costs that DON'T change as you produce more (ex: rent, insurance, etc.)

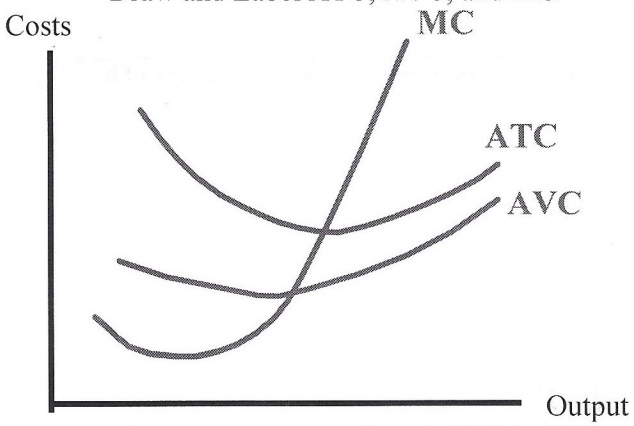
Variable Cost (VC)- Costs that DO change as you produce more (wages to workers, raw materials, etc.)

Total Cost (TC)- Fixed Costs + Variable Costs

Marginal Cost (MC)- Additional cost to produce one additional output.

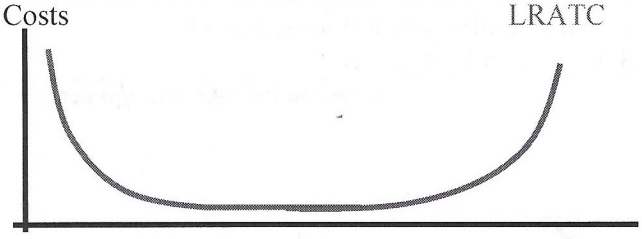
Short Run Cost Curves (at least one fixed resource)

Draw and Label ATC, AVC, and MC



Vertical distance between ATC and AVC is AFC

Long-Run Cost Curves (all resources are variable)



Economies of Scale- Long run average total cost (LRATC) falls because mass production techniques are used.

Diseconomies of Scale- Long run average total cost (LRATC) increase as the firm gets too big and difficult to manage.

Calculating ATC, AVC, AFC, and MC

Fill in the blanks for a firm producing boxes of oranges:

Output (boxes)	Variable Cost	Total Cost	AVC	AFC	ATC	MC
0	$0	$10	-	-	-	-
1	20	$30	$20	$10	$30	$20
2	30	$40	$15	$5	$20	$10
3	60	$70	$20	$3.3	$23	$30
4	100	$110	$25	$2.5	$27	$40

Assume this firm is in a perfectly competitive market and the price is $35 for each box.

1. How many boxes should they produce? Why? 3 Boxes of Oranges, Firms should produce as long as the additional revenue of a unit is greater than the additional cost. To maximize profit, produce where MR = MC
2. Calculate the profit at that quantity
   TR= $105 and TC =$70, Profit = $35

Shut Down Point

Shut Down Rule: A firm should shut down if the price fall below the minimum AVC

Short-Run Supply Curve: The MC curve above minimum AVC

* Per-Unit vs. Lump-Sum

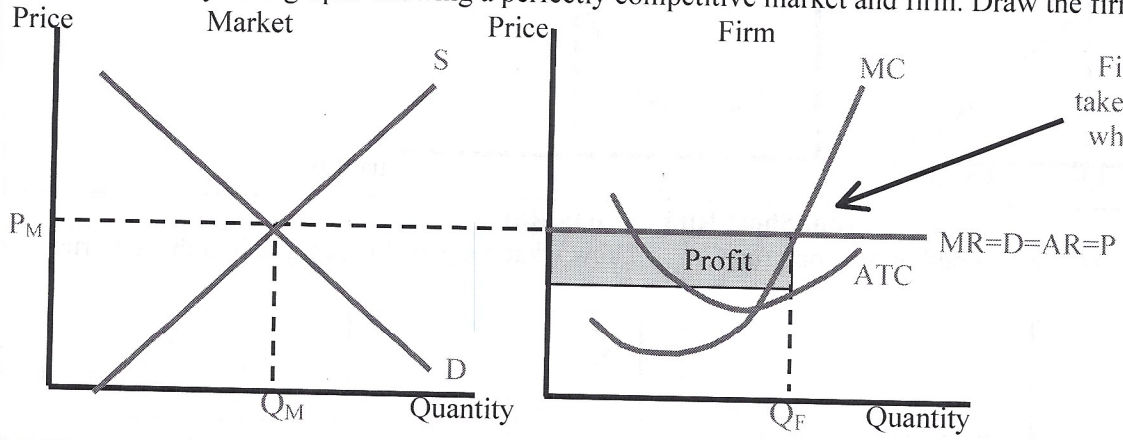
1. A per unit tax shifts _MC, AVC, and ATC_ so quantity will _____Change (decrease)____.
2. A lump sum tax shifts __AFC and ATC__ so quantity will _____NOT change_____.

Characteristics of Perfect Competition

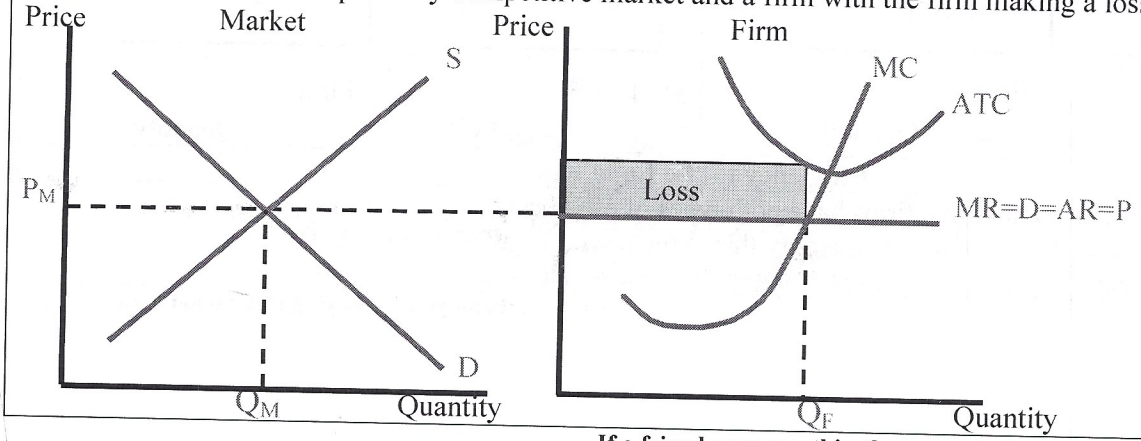
1. Many small firms
2. Identical products
3. No barriers to entry
4. No control over the price
5. No economic profit in long run
6. Efficient

Graphing Perfect Competition

Draw side-by-side graphs showing a perfectly competitive market and firm. Draw the firm making profit



Draw a perfectly competitive market and a firm with the firm making a loss



Calculation Practice

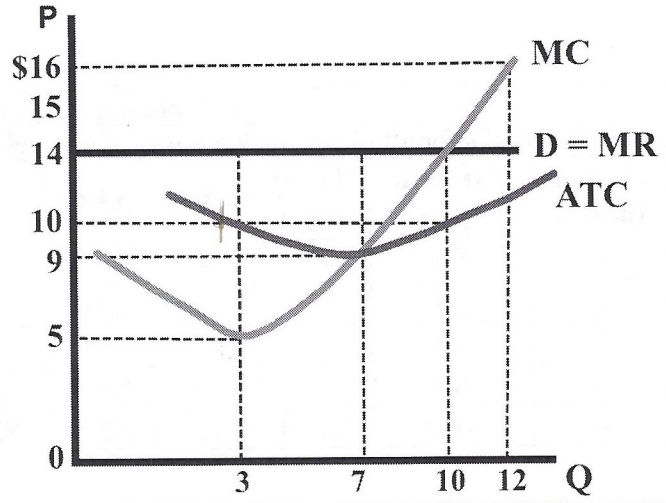
Assume the price is $14 and the firm produces the profit maximizing quantity. Identify the following:

1. Quantity- 10 units (MR=MC)
2. Total revenue- $140 = $14 x 10 units
3. Total cost- $100 = $10 x 10 units
4. Economic profit- $40 = $140 - $100
5. What will happen to the number of firms in the market in the long run? Increase, firms will enter

Assume the market adjust to the long run. Identify:

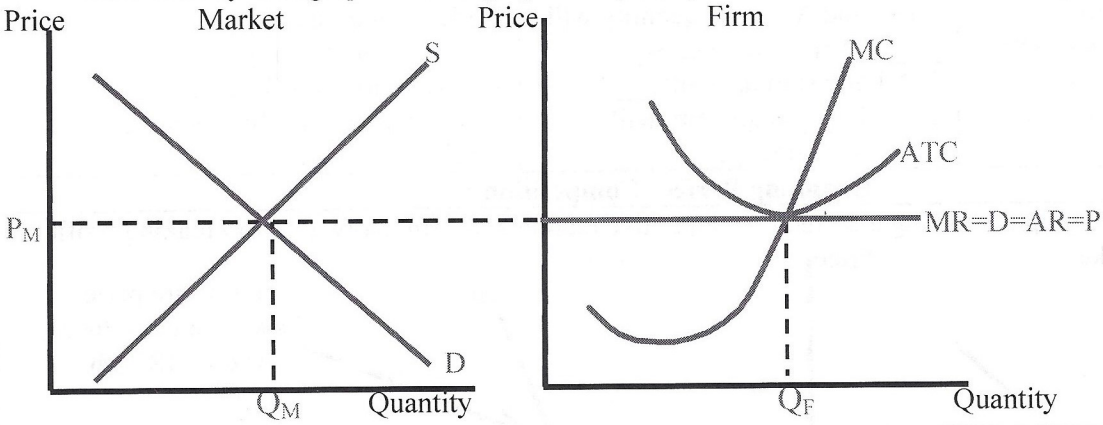
6. Price- $9 (No economics profit, minimum ATC)
7. Quantity- 7 Units (MR=MC)
8. What will happen to number of firms in the market? Not change. No incentive to enter or leave

If the price was $5, should the firm shut down in the short run? Can't tell, need an AVC curve to know



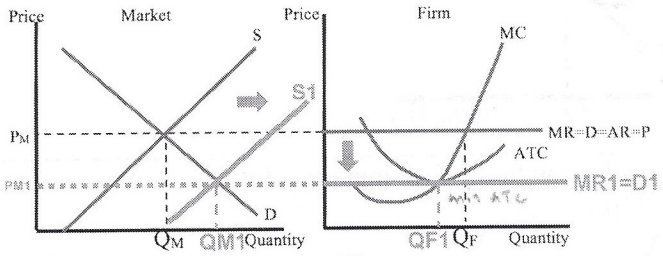
Perfect Competition in the Long Run

Draw side-by-side graphs showing a perfectly competitive market and firm in long run equilibrium



From Short Run to Long Run

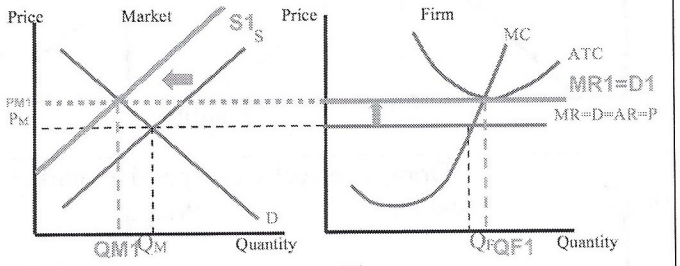
Draw what happens to each graph in the long run



Market:
Price_↓_ Quantity _↑_

Firm:
Price_↓_ Quantity_↓_

Draw what happens to each graph in the long run



Market:
Price_↑_ Quantity _↓_

Firm:
Price_↑_ Quantity_↑_

Efficiency in the Long Run

In the long run, perfectly competitive firms have both types of efficiency:

1. Productive Efficiency: they produce the quantity that is the lowest cost (Minimum ATC)
2. Allocative Efficiency: they produce the optimal quantity that society wants (Price = MC)

Seriously, thank you for buying this packet man

Did you buy this packet? You did! Ok, we're cool

Unit 4: Imperfect Competition

Characteristics of the Four Market Structures

Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
• Many small firms • Identical products • Easy to enter and exit • No need to advertise • Firms are "Price Takers"	• Large number of sellers • Differentiated products • Easy to enter and exit (no long term) • A lot of non-price competition • Some control over price	• A Few Large Firms (Less than 10) • High Barriers • Control Over Price • Mutual Interdependence	• One firm • Unique product • High barriers to enter and exit • Price Maker

Demand and Marginal Revenue

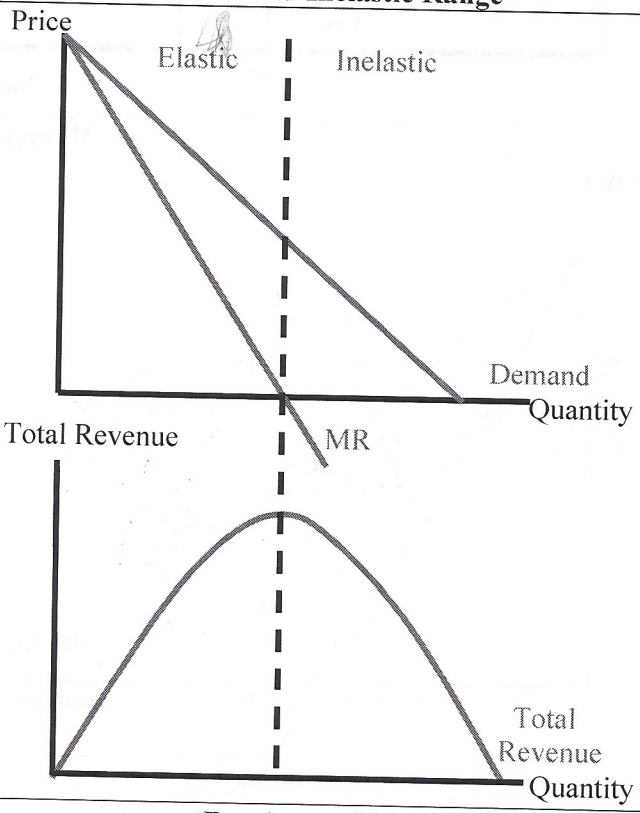
Why is demand greater than marginal revenue for all imperfectly competitive firms?

To sell another unit, the firm must lower the price of the next unit and the units it could have sold at a higher price. (It cannot price discriminate)

Why are monopolies inefficient?

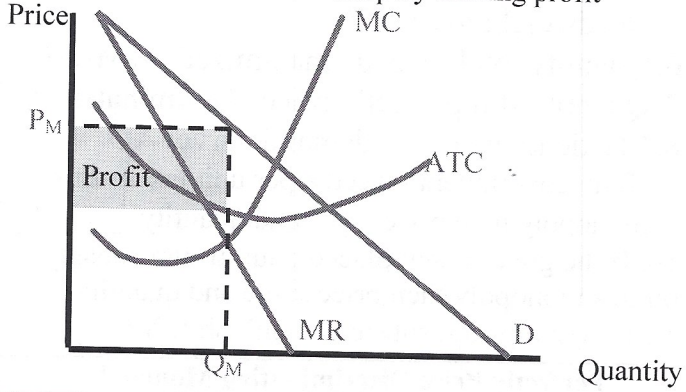
1. Price is too high
2. Quantity is too low
3. They cause deadweight loss (P > MC)

Elastic and Inelastic Range



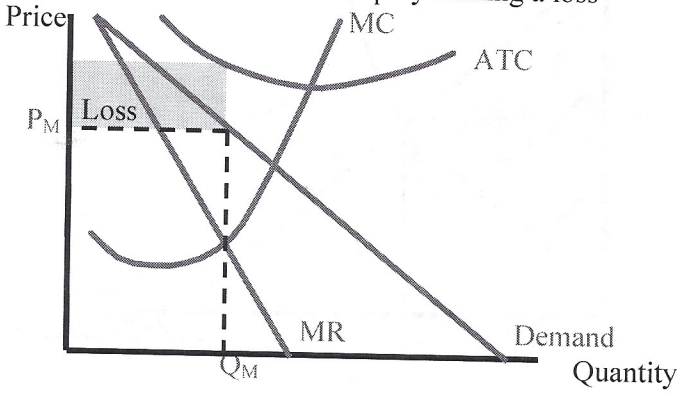
Monopoly Graph (profit)

Draw and label a monopoly making profit



Monopoly Graph (loss)

Draw and label a monopoly making a loss



Barriers to Entry

Identify four common barriers that allow companies to gain and maintain market power

1. Economies of Scale
2. Control of Scare Resources
3. Governmental or Legal Barriers
4. Technological Superiority

Natural Monopolies

What is a natural monopoly?

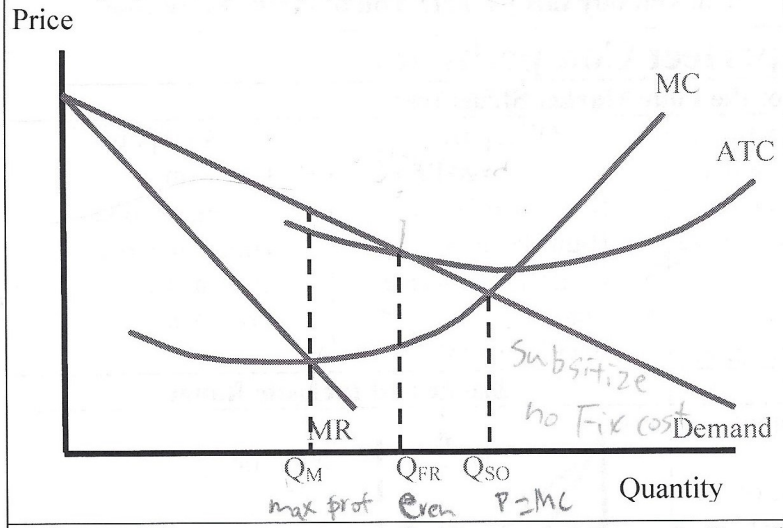
An industry where it is cheaper and more efficient to have a monopoly rather than several smaller competing firms. Example: electric companies

If your teacher gave you this without paying, they are a jerk

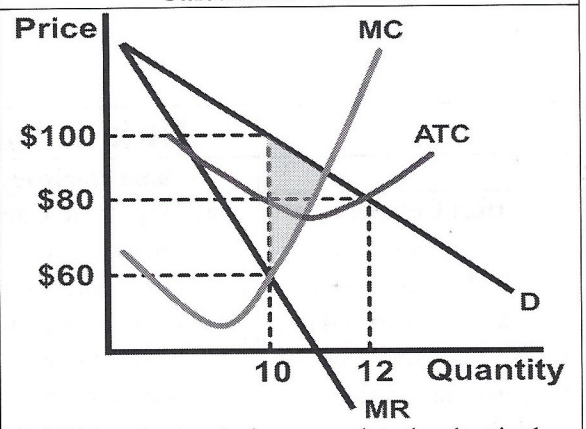
Did you buy this packet? You did! Ok, we're cool

Regulating Monopolies

Draw a natural monopoly. Identify: unregulated quantity (Q_M), socially optimal quantity (Q_{SO}) and fair return quantity (Q_{FR})

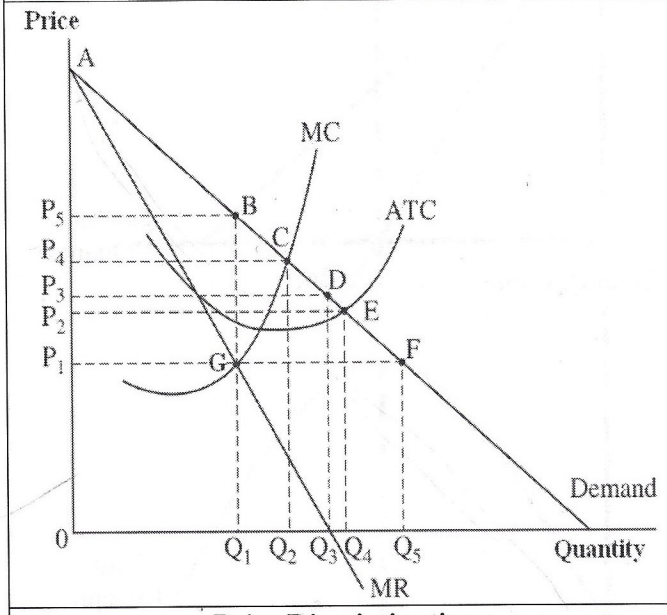


Calculation Practice



1. If this monopoly is unregulated, what is the total revenue, total cost, and profit?
TR= $1000, TC = $800, Profit =$200
2. Shade in Deadweight loss
See above

Monopoly Practice



If this was competitive market

1. Price and quantity: P_4, Q_2
2. Consumer surplus: ACP_4

If this is an unregulated monopoly

3. Price and quantity: P_5, Q_1
4. Consumer surplus: ABP_5
5. Deadweight loss: BCG
6. Quantity total revenue maximized: Q_3 MR=0
7. Quantity if it perfectly price discriminates: Q_2
8. Elastic range of the demand curve: AD
9. If the government placed a per unit tax on this monopoly then price __↑_ and quantity __↓_
10. If the government placed a lump sum subsidy on this monopoly then price same and quantity same. (Lump sum subsidies don't shift MC)

Price Discrimination

Identify the three conditions necessary for a firm to price discriminate

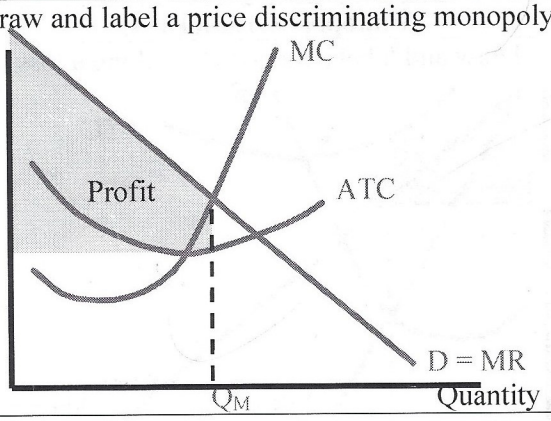
1. The firm must not be a price taker
2. The firm must be able to segregate the market and identify consumers that are willing to pay more
3. The firm must be able to make sure consumers cannot resell the product to other consumers

If a regular unregulated monopoly started perfectly price discriminating, what would happen to consumer surplus and deadweight loss?

There would be no consumer surplus and no deadweight loss

Perfectly Price Discriminating Monopoly

Draw and label a price discriminating monopoly



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Oligopolies and Game Theory

1. If David decides to advertise now and Lindsey decides to do it later, what is David's expected profit? $1000
2. What is Lindsey's dominant strategy? Now
3. What is David's dominant strategy? None
4. If both owners have the information but do not actively collude, what will be the outcome? Both will choose Now

Assume the advertising company offers a deal that increases the profit for both owners by $2,000 but only if they advertise later. Based on these changes:

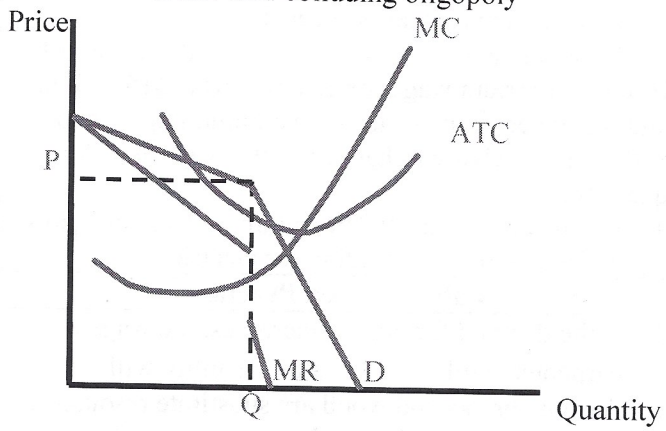
5. What is Lindsey's dominant strategy? None
6. What is David's dominant strategy? Later

Assume that two business owners are deciding between advertising now and advertising later. The chart shows expected profit with Lindsey's on the left

Lindsey \ David	Now	Later
Now	$5,000, $4,000	$3,000, $3,500
Later	$900, $1,000	$1,500, $1,800

Kinked Demand Curve

Draw non-colluding oligopoly



Nash Equilibrium

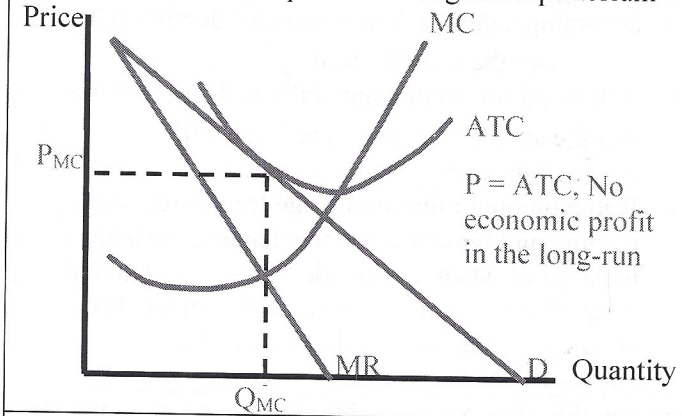
Definition of Nash Equilibrium-
The optimal outcome where neither player can make themselves better off by deviating from the current strategy

Firm 1 \ Firm 2	High	Low
High	**$100, $50**	**$60, $90**
Low	**$50, $40**	**$20, $10**

Assume these two firms can choose between pricing high and pricing low. What is the Nash Equilibrium?
Firm 1 High, Firm 2 Low ($60, $90)

Monopolistic Competition

Draw a Mono. Comp. firm in long-run equilibrium



Excess Capacity (define below and label on graph)
The gap between the minimum ATC output and the profit maximizing output.
Given current resources, the firm can produce at the lowest costs (minimum ATC) but they decide not to.

If a monopolistically competitive firm is making a profit in the short-run, what will happen to the demand and number of firms in the long run?

- New firms enter to make profit
- Firms must share same amount of consumers
- Demand for each firm falls until each firm makes no economic profit

What are examples of non-price competition?

- Brand names or packaging
- Product attributes
- Service
- Location

What are the two goals of advertising?

1. Increase the demand for the product or service
2. Make the demand more inelastic

Dude, please don't post this online

1h

I(cake) A(software)

100 1000

100x1=MRP 1000x1=MRP

: The Resource Market

Define Key Terms

n (land,
usinesses

e willing and

d able to sell

their labor at different wages

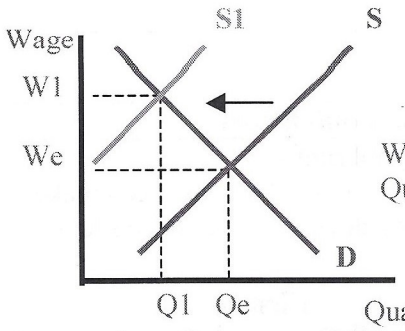
Derived Demand-
The demand for resources is determined (derived) by the products they help produce. (ex: the demand for carpenters is derived by the demand of homes)

*Marginal Revenue Product (MRP)-
The additional revenue generated by an additional resource (worker).

*Marginal Resource Cost (MRC)-
The additional cost of an additional resource (worker)

Demand and Supply for Labor

Draw a competitive market for plumbers. Label the equilibrium wage and quantity



Wage- increases
Quantity- decreases

Assume the government establishes a certification process that makes it harder to be a plumber. Show on the graph what will happen to the wage and quantity

Resource Shifters and Equilibrium

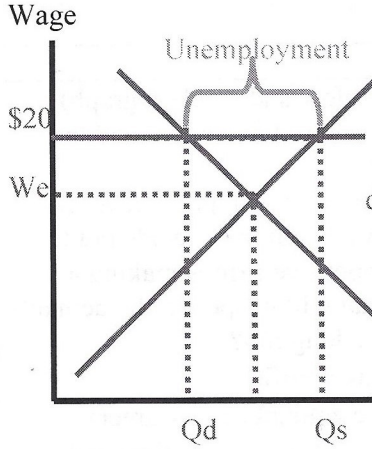
Shifters of Labor Demand-
1. Change in the demand for the product
2. Change in the productivity of the resource
3. Change in the price of related resources (substitute and complementary resources)

Shifters of Labor Supply-
1. Number of qualified workers
2. Government regulation/licensing
3. Personal values regarding leisure and societal roles

If the equilibrium wage for electricians is $15 an hour and the government established a minimum wage of $10 an hour, what will happen to the wage and quantity?
They will stay the same. The minimum wage is below equilibrium and is not binding for electricians

Minimum Wage

Draw the results of a minimum wage. Label the quantity supplies (Qs) & the quantity demanded (Qd)



A $20 minimum wage would increase Qs and decrease Qd resulting in a surplus of labor (unemployment)

Labor Market Practice

1. If the demand for houses increases, the wage of carpenters will __↑__ and the quantity will __↑__.
2. Assume bricks and wood are substitute resources. If the price of bricks increases, the price of wood __↑___ and the quantity __↑___.
3. If the government removes all regulations for becoming a dentist. The wages for dentists will __↓__ and the quantity will __↑___.
4. If demand for accountants falls at the same time that the supply increases, the wage will __↓__ and the quantity will __be indeterminate___.
5. Will a binding minimum wage lead to relatively less unemployment when the demand for labor is inelastic or when it is elastic? When the demand is inelastic there will be less unemployment. The quantity demanded will decrease a little since employers still need these workers

12

Unit 5: The Resource Market

Define Key Terms

The Resource (Factor) Market-
All markets where the factors of production (land, labor, capital) are sold by households to businesses

Demand for Labor- firm
The number of workers that businesses are willing and able to hire at different wages

Supply for Labor- You
The number of workers that are willing and able to sell their labor at different wages

Derived Demand-
The demand for resources is determined (derived) by the products they help produce. (ex: the demand for carpenters is derived by the demand of homes)

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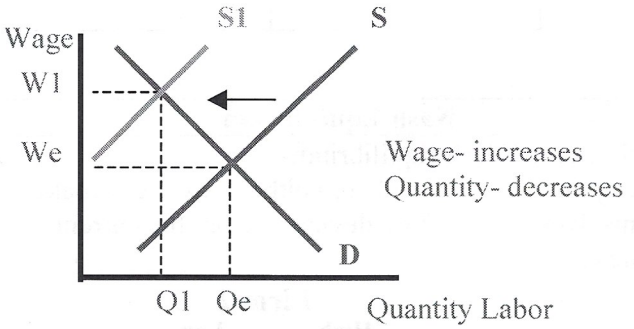

Wage- increases
Quantity- decreases

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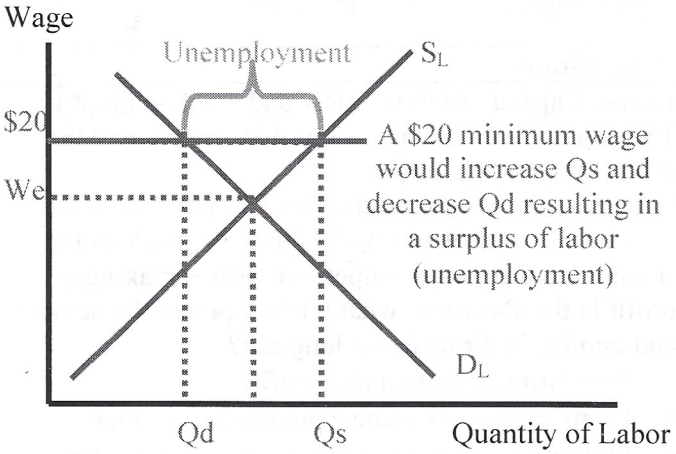
Minimum Wage

Draw the results of a minimum wage. Label the quantity supplies (Qs) & the quantity demanded (Qd)



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Labor Market Practice

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2. Assume bricks and wood are substitute resources. If the price of bricks increases, the price of wood __↑__ and the quantity __↑__.
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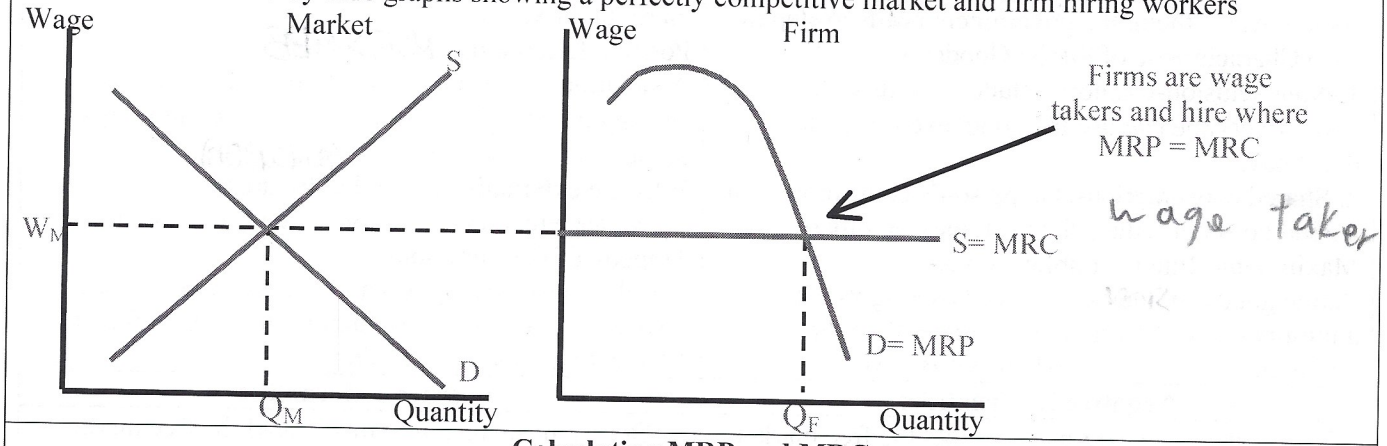
5. Will a binding minimum wage lead to relatively less unemployment when the demand for labor is inelastic or when it is elastic? When the demand is inelastic there will be less unemployment. The quantity demanded will decrease a little since employers still need these workers

12

Perfectly Competitive Labor Market and Firm

Draw side-by-side graphs showing a perfectly competitive market and firm hiring workers



wage taker

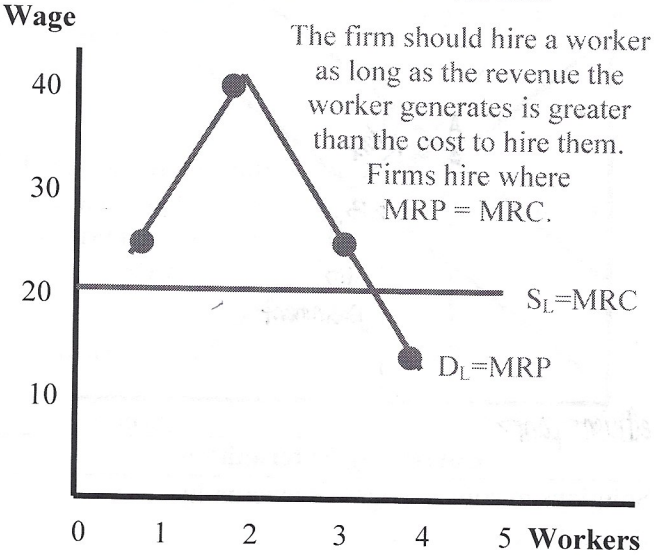
Calculating MRP and MRC

MP x Price =

Number of Workers	Total Product	Marginal Product	Marginal Revenue Product
0	0	-	-
1	5	5	$25
2	13	8	$40
3	18	5	$25
4	21	3	$15
5	20	-1	$-5

1. Assume perfectly competitive product and labor markets. If the price of the product is $5 and the wage is $20, how many workers should be hired? 3
2. How much is the profit or loss? $90 - $60 = $30
3. Assume that this firm develops a process that makes only their workers more productive. The wage will __stay the same___ and the quantity will __↑___.

Plot the MRP and MRC for the firm



Combining Resources

Least cost rule when combing resources-

$$\frac{\text{Marginal Product Labor}}{\text{Price of Labor}} = \frac{\text{Marginal Product of Capital}}{\text{Price of Capital}}$$

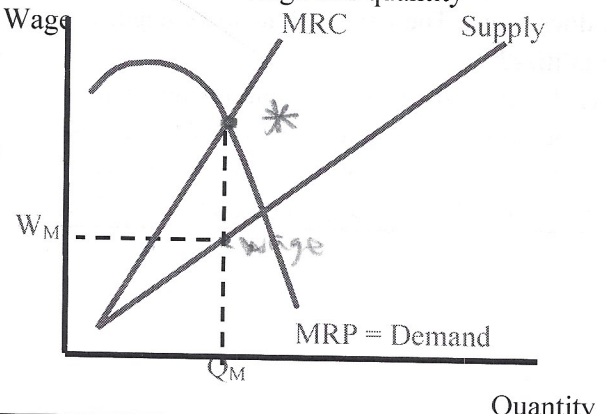
Profit maximizing rule for combing resources-

$$\frac{MRP_X}{MRC_X} = \frac{MRP_Y}{MRC_Y} = 1$$

Assume a company uses two resources, workers and robots, and the MRC for each is $20. Currently the MRP of the last worker hired is $30 and the MRP of the last robot is $10. The company should __↑__ the number of workers and __↓__ the number of robots.

Monopsony

Draw a monopsony and label the unregulated wage and quantity



Unit 6: Market Failures and the Role of the Government

Public Goods

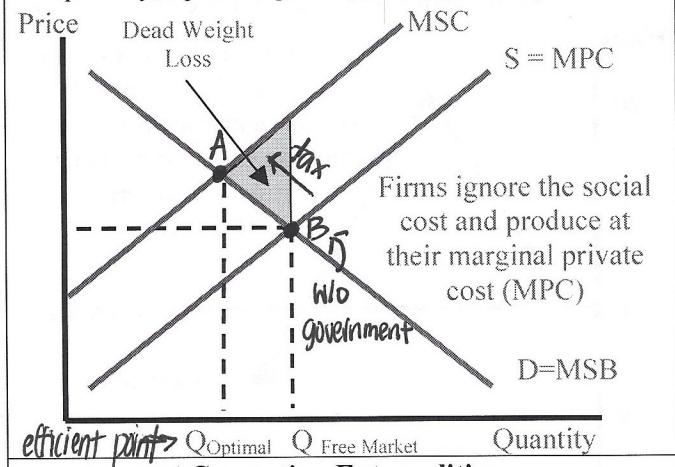
Why are public goods a market failure?
Businesses in the free-market won't provide public goods and service since they can't earn profit. If society wants them, the government needs to step in
Two Characteristic of Public Goods:
1. Nonexclusion-Cannot exclude benefits of the good. Everyone can use the good, even those that don't pay.
2. Shared consumption-One person's consumption of a good does not reduce the usefulness to others.
Maximizing Rule for Public Goods-
Public goods should be produced as long as the additional benefit to society is greater than the additional cost. Produce where MSB = MSC

Externalities

Negative Externality- MSC > MPC
A situation that results in external costs on others causing the marginal social cost to be higher than the marginal private cost
Positive Externality- MSB > MPB
A situation that results in external benefits on others causing the marginal social benefit to be higher than the marginal private benefit (education)
Why are externalities a market failure?
They cause markets to produce the wrong output
Tragedy of the Commons-
A lack of property rights causes individuals to uses resources in a way that is contrary to the benefits of society (example- overfishing)

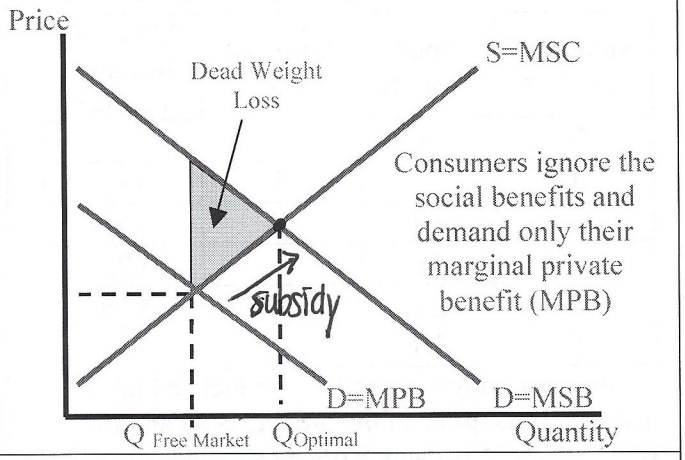
Negative Externalities

Draw a negative externality. Label the free market quantity, optimal quantity, and deadweight loss



Positive Externalities

Draw a positive externality. Label the free market quantity, optimal quantity, and deadweight loss

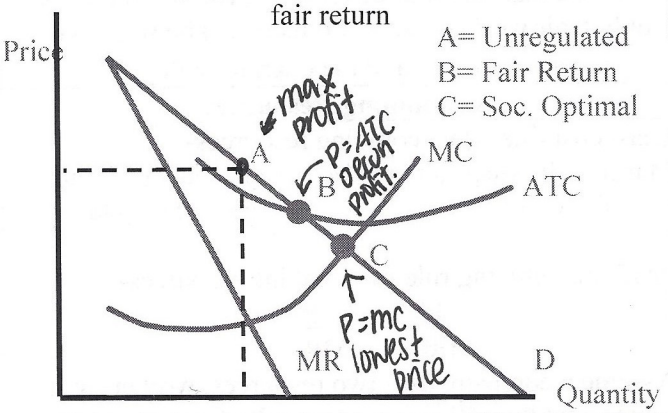


Correcting Externalities

Solutions to solve a negative externality-
Per unit tax
Government regulation decreasing output
Solutions to solve a positive externality-
Per unit subsidy
Government regulation that increases output
How does Coase Theorem seek to solve negative externalities?
Coase Theorem suggests that establishing property rights and allowing the parties involved to negotiate alternatives leads to a more efficient solution (Ex: businesses buy the right to pollute up to a set limit)

Regulating Monopolies

Label a monopoly unregulated, socially optimal, and fair return



Thanks for buying this packet. Seriously. Thank you!

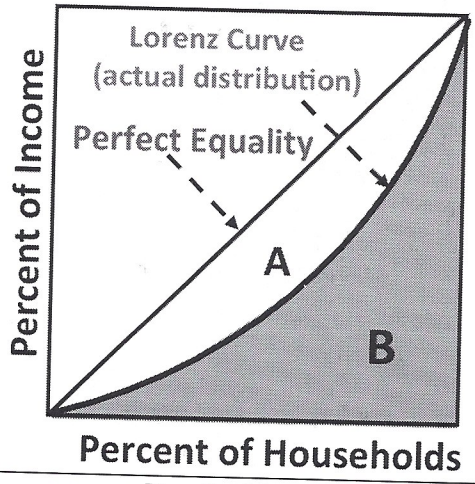
Income Inequality

What are transfer payments?
Government payments to individuals or businesses designed to meet a specific objective rather than pay for goods or resources. (Ex: Welfare)

What is the Gini Coefficient?
A statistical measurement of income equality where perfect equality is 0 and perfect inequality is 1. On the graph, it is Area A divided by the sum of areas A and B.

What would happen to the Gini Coefficient if the government increased the amount it taxes wealthier citizens and increase transfer payments to the poor?
The Gini coefficient would get smaller. ↓ income equality = ↓ gini coefficient.

Draw and label the Lorenz Curve showing equal distribution of income and the actual distribution



Types of Taxes

1. Progressive Tax- takes a larger percent of income from high income groups (takes more percent from rich people).
2. Proportional Tax- takes the same percent of income from all income groups.
3. Regressive Tax- takes a larger percentage from low income groups (takes more percent from poor people).

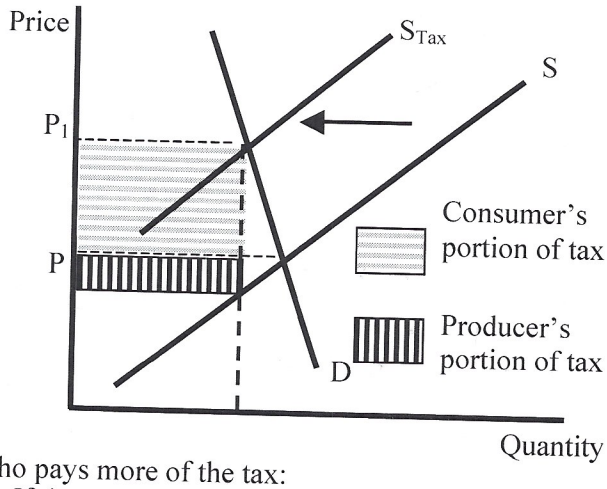
Income Distribution Practice

1. What is the difference between income inequality and wealth inequality?
Income looks at how earnings are distributed and wealth inequality looks at how assets are distributed

2. An increase in job training for low-skilled workers would likely ___↓___ income inequality and cause the Gini coefficient to ___↓___.

Tax Incidence

Label the amount consumers and producers pay of tax



Who pays more of the tax:
1. If demand is elastic and supply is inelastic? Producers
2. If demand is inelastic and supply is elastic? Consumers
3. If demand is perfectly inelastic? Consumers pay all

Congratulations! You're done with microeconomics