Chapter 13

Understanding the Costs of Production

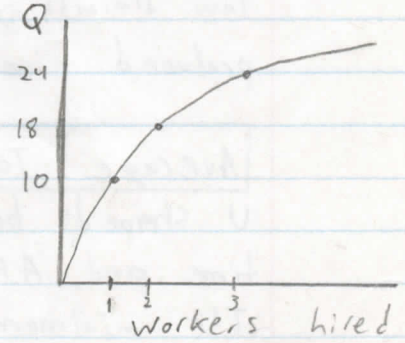
Explicit Costs: Actual money going out, paying wages or lease, etc

Implicit Costs: No money transfer, often opportunity cost of forgone next best alternative

Economist

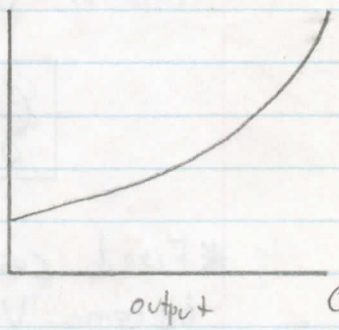
Accountant

Diminishing Marginal Product: With each new worker that is hired, the marginal Product of each worker will decrease over time



Fixed Costs: Payed regardless of output if any output at all

Total Cost Curve: (Total cost)



cost increase exponentially as output increases

Variable Costs: Costs that change and correspond to output produced

Total cost = Fixed costs + Variable Costs

Average Total Cost: The cost of each unit produced

$$ATC = \frac{TC}{Q}$$

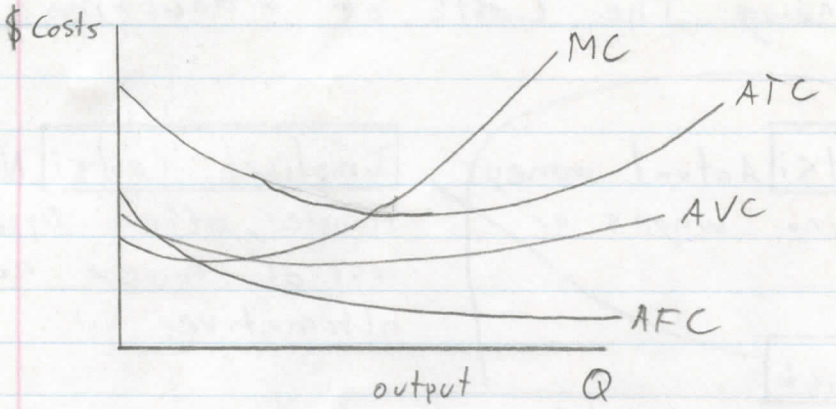
$$AVC = \frac{VC}{Q}$$

$$AFC = \frac{FC}{Q}$$

Marginal Cost: How much it costs to produce one more unit of output

Output 3 cost = $4
output 4 cost = $6
MC = $2

$$MC = \frac{\Delta TC}{\Delta Q}$$



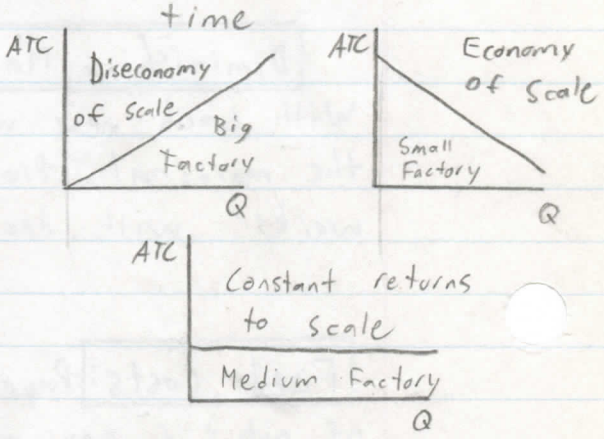
*MC crosses ATC at its minimum

*AVC rises with time

*AFC falls with time

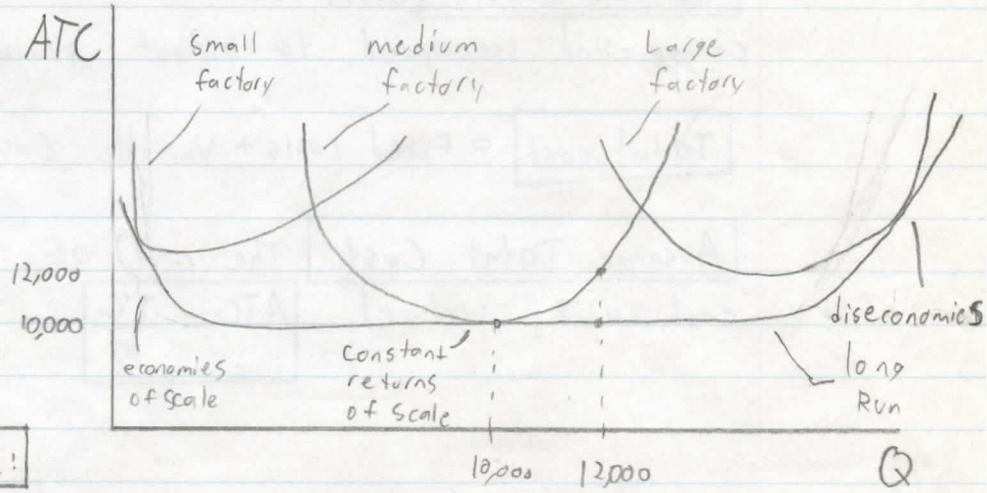
Marginal cost (MC): rises because of law diminishing MP. MC of each q produced rises

Average Total Cost (ATC): Is U shaped because AVC rises with time and AFC falls with time. The minimum point is the efficient scale or lowest cost point



SHORT RUN VS. LONG RUN

*Fixed costs become Variable costs in the long Run



Economies of Scale:
ATC falls as Q rises

Diseconomies of scale:
ATC rises as Q rises

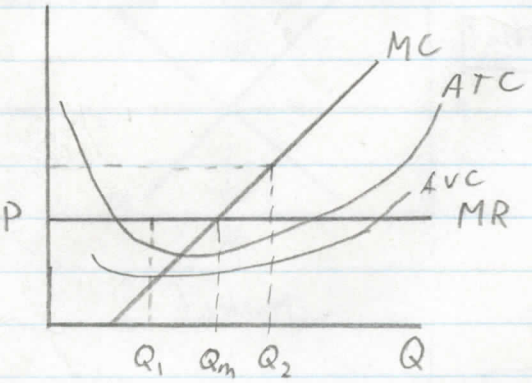
Understanding Perfect Competition

Perfectly competitive: Many sellers, same good

Total Revenue $TR = P \times Q$

Average Revenue: $AR = \frac{TR}{Q}$ will always equal the price of the good. $AR = P = MR$

Marginal Revenue: $MR = P$ for perfectly competitive firms MR is revenue for each new unit sold which always equals Price



$MC < MR$ Q_1: Increase Production

$MC = MR$ Q_m: Profit is maximized

$MC > MR$ Q_2: Reduce production

Shut down: Short-Run Decision

Exit: Long-Run Decision

Long Run SS is more elastic than Short Run SS

* Because Fixed costs are unavoidable — Shut down if $P < AVC$

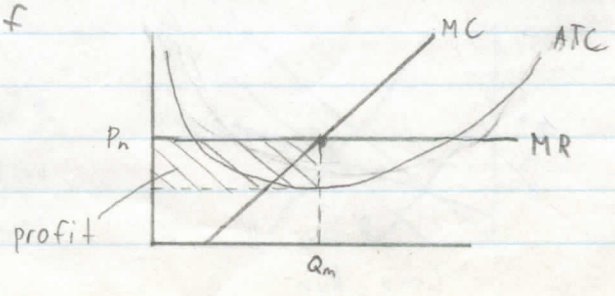
Exit if $P < ATC$

* Firm that had shut down would re-open if P now exceeded AVC

Profit = $TR - TC$

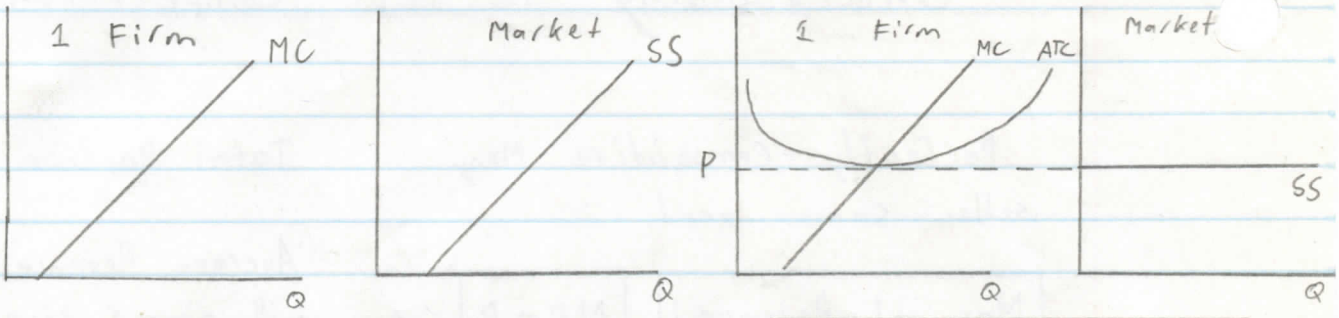
Profit = $\frac{P - ATC}{Q}$

* New firm would only enter the market if P exceeds ATC



Short Run
Fixed # of Firms

Long Run
Firms can leave/Enter

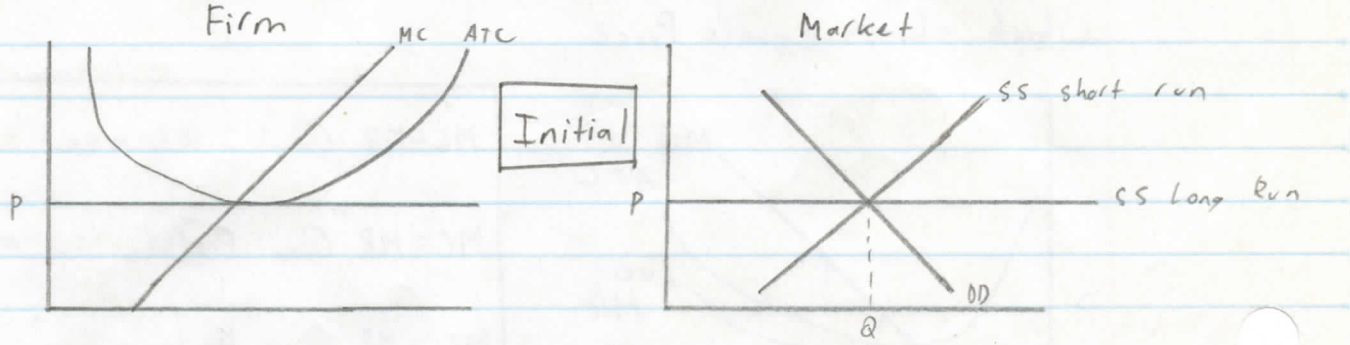


Supply curve = MC

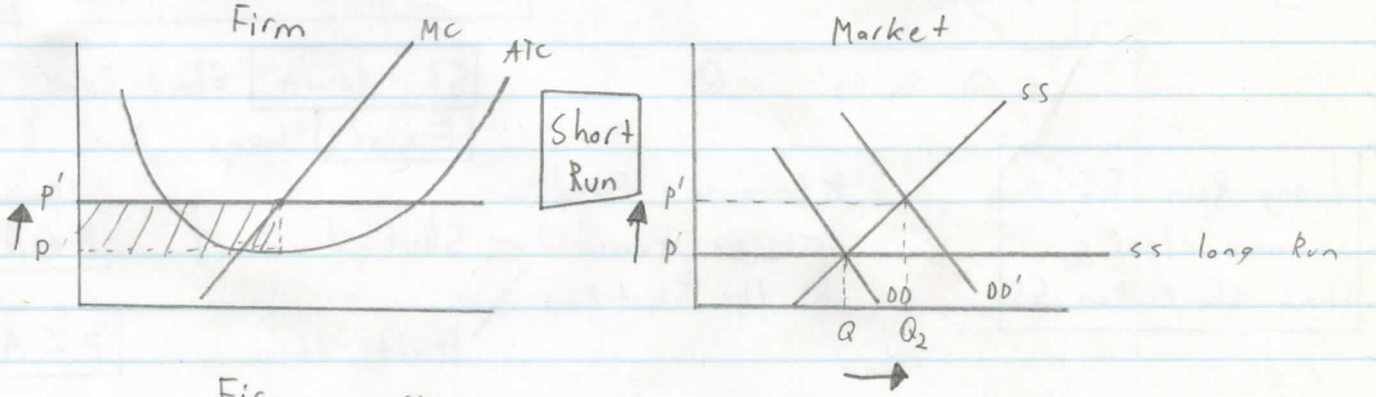
Supply Curve = Price

* no economic profits
no incentive to enter/leave

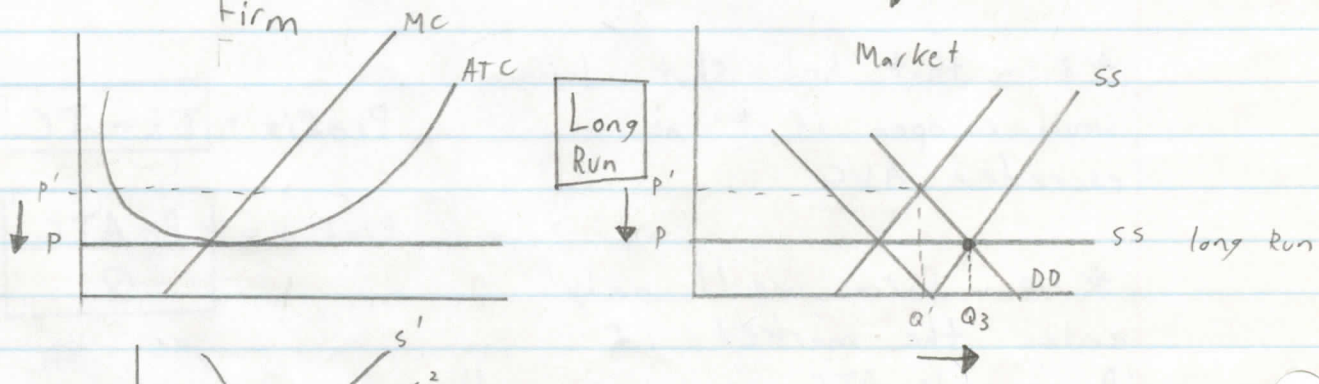
Initial Market Conditions

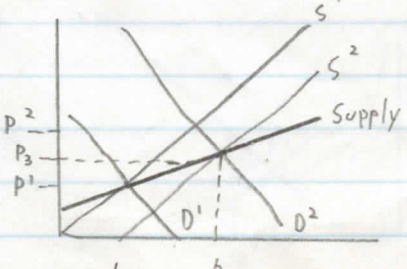


Scientists discover Milk cures Cancer DD shifts Right



New firms Enter Price is reduced back to where P = ATCmin but Q has increased

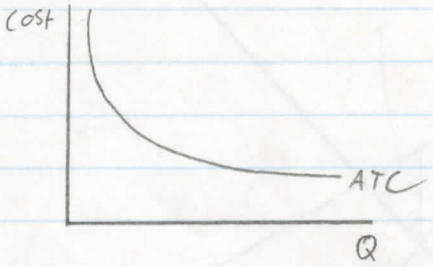




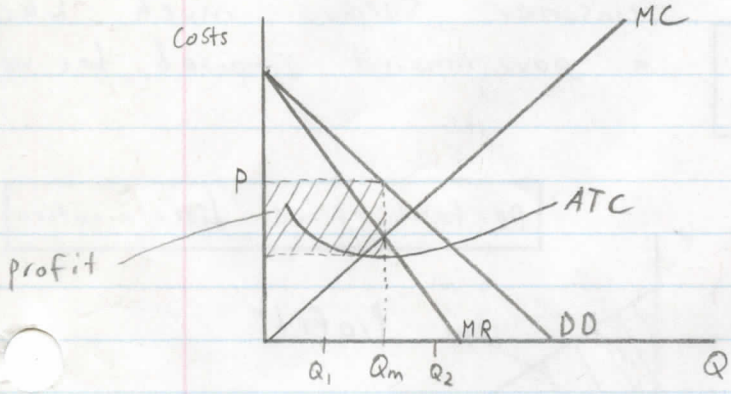
* Supply curve is not always perfectly elastic in long run if new entrants have higher costs

Understanding Monopoly

Natural Monopoly: is an economy of scale ATC falls with increase output



*MR is always less than the Price of the good



* Monopoly produces where $MR = MC$ and then straight up to the DD curve to get price

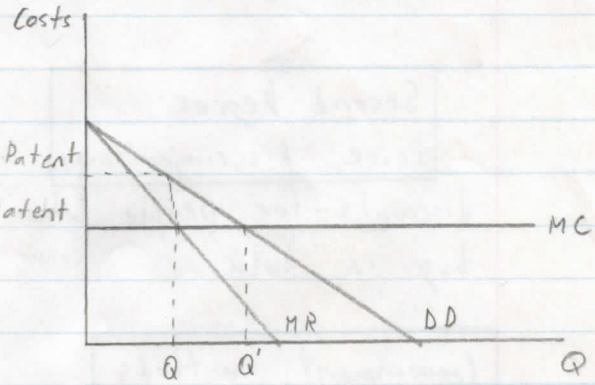
Q_1: Increase production

Q_m: Profit is maximized

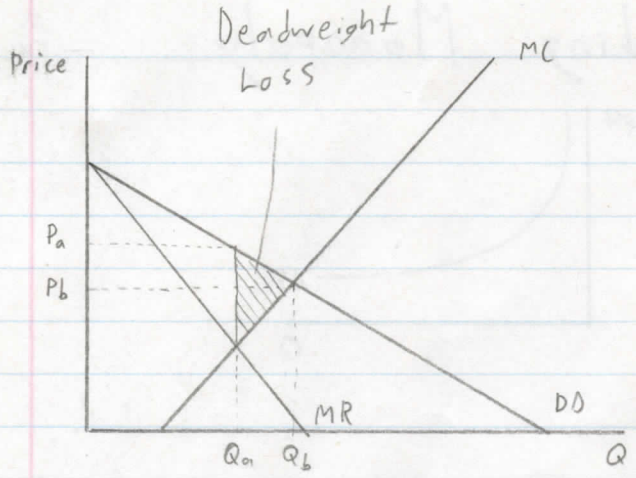
Q_2: Reduce production

$$\text{Profit} = (P - ATC) \cdot Q$$

$$\text{Profit} = TR - TC$$



*MC for drugs is usually perfectly elastic.
- patent expiring turns this competitive so price drops and Q increases

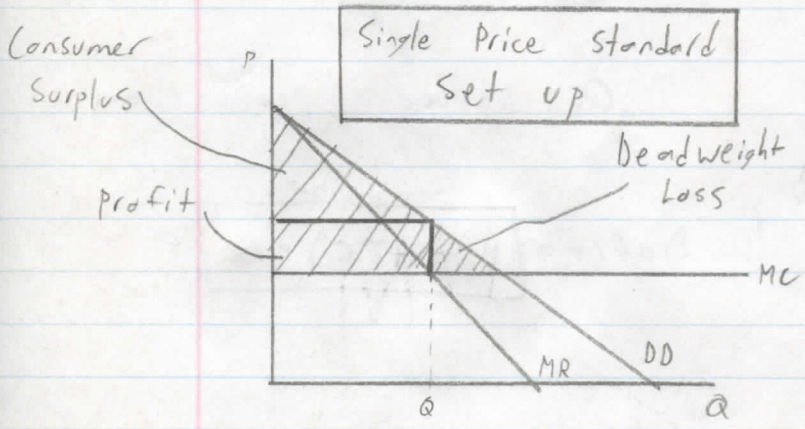


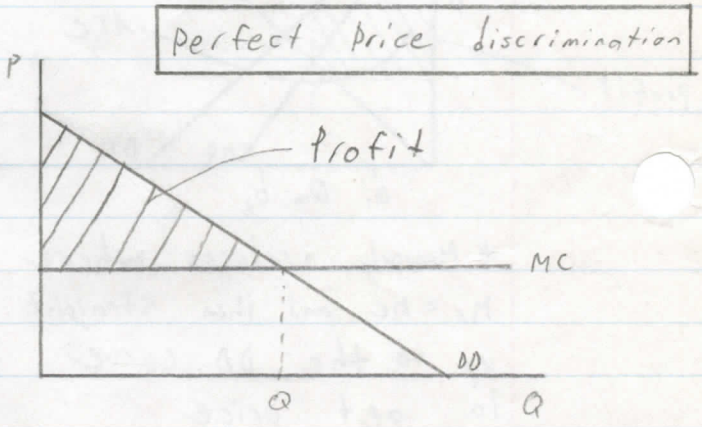
a = Price and quantity a monopoly would produce

b = ideal market price and Quantity

= Deadweight Loss, monopolist is stealing some of the consumer surplus much like a government imposed tax would

Price Discrimination





Second Degree Price discrimination: discounts for people who buy in bulk

Third Degree Price Discrimination: Movie theatres have different prices for kids, seniors etc

Government methods to take down monopolies:

1. Try to make them more competitive
2. Regulating them
3. Turning them into public enterprises
4. Nothing at all

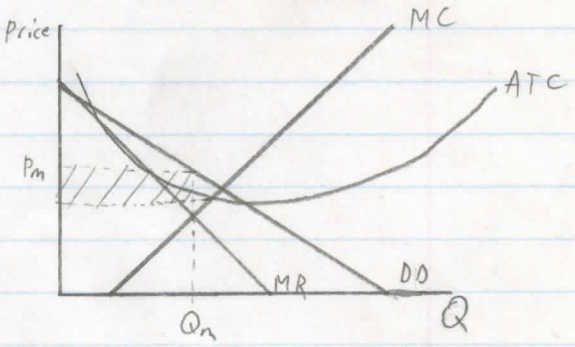
Economic Profits	P > ATC
Economic Loss	P < ATC
Neutral	P = ATC

Understanding Monopolistic Competition

Monopolistic Competition:

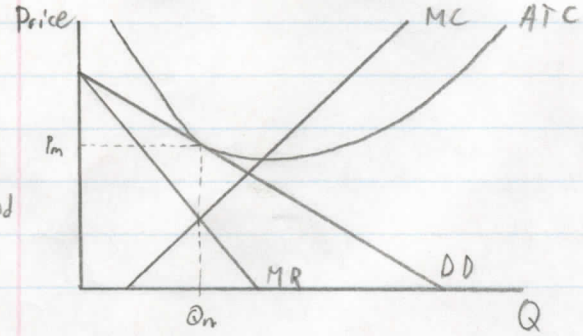
1. Many Sellers
2. Different Products
3. No barriers to entry or exit

Short Run:



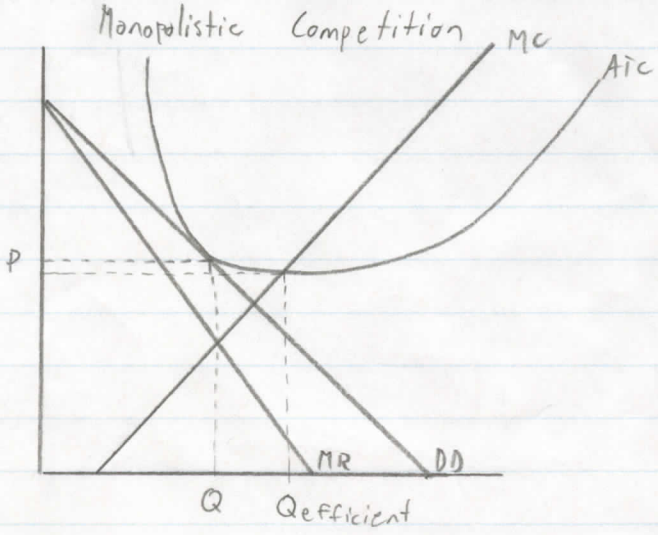
Same as Monopoly

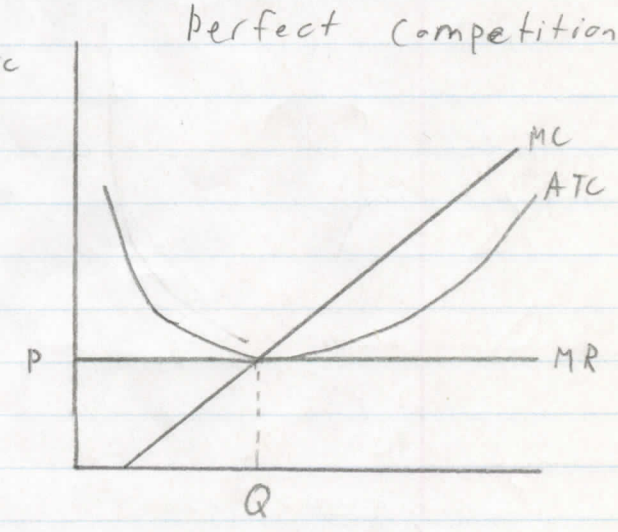
Long Run:



*As more firms enter or leave economic profits go to zero and price = ATC

LONG RUN





*Niether makes profit but monopolistic is inefficient because it produces below the efficient level of output at a higher price

Understanding Oligopoly

Oligopoly:

① Few sellers
② Same product

* If neither Cheats

B's output	A's Output: $\frac{1}{2}$ Monopoly	A's Output: $\frac{2}{3}$ Monopoly
$\frac{1}{2}$ Monopoly	A Profit = 20 B Profit = 20	A Profit = 22 B Profit = 15
$\frac{2}{3}$ Monopoly	A Profit = 15 B Profit = 22	A Profit = 17 B Profit = 17

* Dominant Strategy by both A and B leads here