

SECTION 10: Behind the Supply Curve: Profit, Production, & Costs:

Need to Know:

$$\pi = TR - TC$$

Profit = total revenue – total cost

$$TR = P \times Q$$

Total Revenue = the price paid times the number sold

$$\pi = \text{Total Revenue} - \text{Total Explicit Costs}$$

Accounting profit = revenue – (explicit costs + depreciation)

$$\pi = \text{Total Revenue} - \text{Total Explicit Costs} - \text{Total Implicit Costs}$$

Economic profit = revenue - opportunity costs of its resources; both explicit and implicit (usually less than the accounting profit)

$$MR = \Delta TR / \Delta Q$$

Marginal Revenue = (Change in Total Revenue)/(Change in Output)

$$MC = \Delta TC / \Delta Q = \Delta (VC + FC) / \Delta Q = \Delta VC / \Delta Q$$

Marginal Cost = (Change in Total Cost)/(Change in Output)

Profit Maximization Rule: firms will continue to produce as long as $MR > MC$. They will stop producing, because they have produced all units that earn them profit (i.e. where $MR > MC$) when $MC = MR$.

Optimal Output Rule: $MC = MR$ is the rule for profit maximization and one of the cornerstone results in microeconomics

$$TC = FC + VC$$

Total cost = fixed cost + variable cost

$$ATC = TC / Q$$

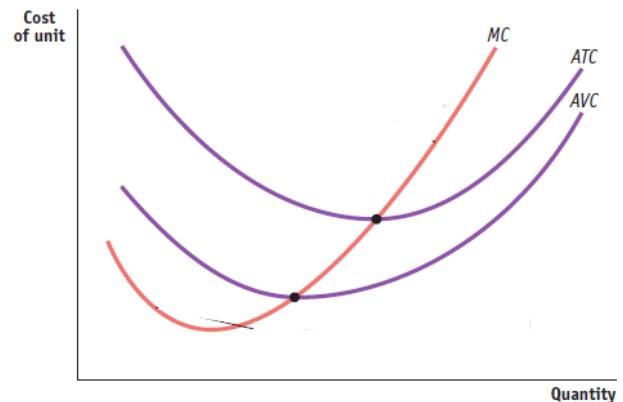
Average Total Cost = (Total Cost)/(Output)

$$AVC = TVC / Q$$

Average Variable Cost = (Total Variable Cost)/(Output)

$$AFC = TFC / Q$$

Average Fixed Cost = (Total Fixed Cost)/(Output)



[Type here]

Marginal Product (MP) of an input is the additional output produced as a result of hiring one more unit of the input. Anytime the marginal product per dollar is not equal, the firm can reshuffle employment of labor and capital to increase output while keeping costs unchanged.

Cost-minimization rule (least-cost combination of inputs): $MP_L/w = MP_K/r$

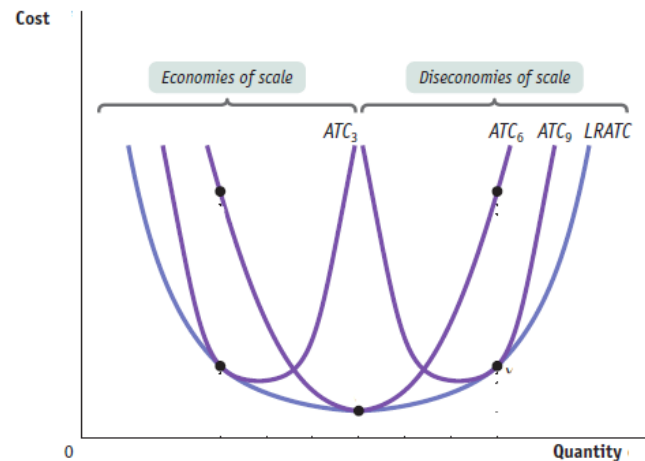
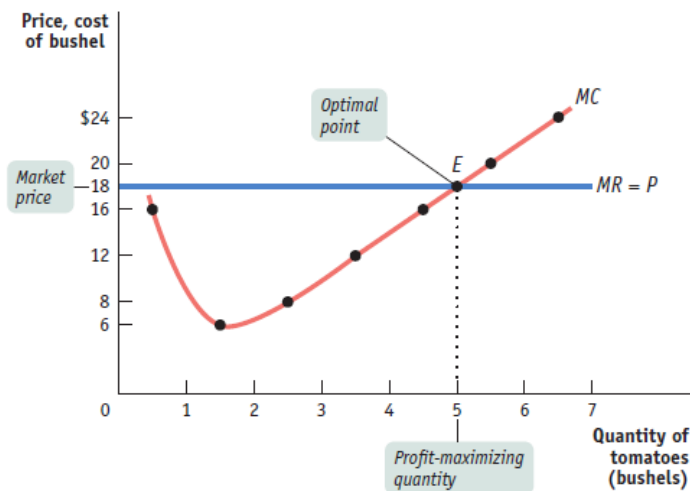
(Marginal Product of Labor)/(wage rate) = (Marginal Product of Capital)/(rent)

$$MP_L = (\Delta Q)/(\Delta L)$$

Marginal Product of Labor = (Change in Total Output)/(Change in Labor)

$$MP_K = (\Delta Q)/(\Delta K)$$

Marginal Product of Capital = (Change in Total Output)/(Change in Capital)



		Are products differentiated?	
		No	Yes
How many firms are there?	One	Monopoly	Not applicable
	Few	Oligopoly	
	Many	Perfect competition	Monopolistic competition