

Micro Ch. 13

1. Diminishing MPL
 - a. Marginal product of any input declines as the quantity increases
 - b. This is caused by fixed inputs land or capital
2. Farmers Katie and Jake
 - a. Pay \$1000 per month for the land
 - b. Market wage \$2000 a month
3. Total Cost Associated with producing one additional Q
4. Cost
 - a. Fixed cost: (FC) do not vary with the quantity of output
 - i. Example: cost of land
 - ii. Usually it is rent, or cost of equipment
 - b. Variable Cost: (VC) vary with the quantity produced
 - i. Input costs
 - ii. Labor costs
 - c. Total Costs = Fixed Cost + Variable Cost
 - d. Average total cost = Total Cost/Quantity
 - e. $TC/Q = FC/Q + VC/Q \ggg ATC = AFC + AVC$
5. Marginal line always intersects the average at average lines lowest point
 - a. MC intersects ATC at its minimum
 - b. ATC is V shaped
 - c. Short run: land and or capital (machines)
6. Three factory types: Small, Medium, and Large
 - a. Economies of Scale (EOS): when you become more efficient as you get larger
 - i. Example: Wal Mart
 - b. Constant Returns to Scale: larger you get, but don't improve efficiency
 - c. Diseconomies of sale: Coordination problems, too large
7. Firm's goal is to maximize profit
 - a. $\pi = \text{Profit} = \text{Total Revenue (TR)} - \text{Total Costs (TC)}$
 - b. **Total Revenue:** the amount a time receives from the sale of its output
 - c. **Total Costs:** the market value of the inputs a firm uses in production
 - d. Total Costs include explicit and implicit cost
 - i. Explicit - costs that require paying out money
 - ii. Implicit - costs that do not require paying out money
 - iii. Example: need \$100,000 to start a company, interest rate is 5%
 1. Case 1: borrow \$100k: explicit interest cost 5k
 2. Case 2: used \$40k of savings, borrowed \$60k, would make \$2k from \$40k in interest, would pay \$3k in interest for \$60k that was borrowed. Implicit would be \$2k because instead of gaining the interest, she never gained it because she used the money on her business, this would be implicit cost, \$3k would be explicit
 - iv. Example: \$1000 from savings earning 3%, had to borrow \$2000 at 7%
 1. What are John's implicit and explicit financial costs?

2. Accounting $TT = TR - \text{Total explicit costs}$
 3. Economist $TT = TR - \text{TR} - \text{explicit and implicit costs}$
- v. Example: Katherine earns \$15 hour teaching piano
1. Spends 5 hrs planting \$50 worth seeds in her garden, she can sell them for \$150
 2. Acct $TT = \$150 - \$50 = \$100$
 3. Econ $TT = \$150 - \$50 + \$15 \times 5 = \25
8. **Production Function:** Shows the relationship between the quantity of inputs used and quantity of outputs produced
- a. Example: Jake and Katie 5 acres of land
9. **Marginal Product of Labor (MPL):** increase in output from one additional unit of labor
10. **Diminishing MPL:** land or capital (machines) being fixed