ESM 251: SECTION ONE

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OPTIMIZATION AND EQUILIBRIUM

Optimization: people try to choose the best patterns of consumption that they can afford
Equilibrium: Price adjusts until the amount people demand of something is equal to the amount that is supplied.

Maximum willingness to pay is also known as the reservation price. At reservation price, an individual is just indifferent to purchasing or not purchasing a good.

THE DEMAND CURVE

Relates quantity demanded to price. Demand curve slopes downward. Why? As price decreases, more people are willing to purchase. The quantity demanded is the total amount of a good that buyers would choose to purchase under given market conditions. The determinants of demand include (In other words, what shifts the demand curve?) :

1. Number of Buyers
2. Price of substitutes and complements
3. Preferences of population
4. Income and wealth
5. Future Expectations

•**Market Demand** :Sum demand curves of all buyers in market.

Q1: Consider the market for reusable water bottles. Suppose there are 50 individuals who demand water bottles and each individual has a demand curve given by: $Q_D = 5 - 2P$. What is the market demand curve for water bottles?

Q2: Suppose there are three consumers of ?. Amy's demand curve: $Q_A = 300 - 2p$; Ben's demand curve $Q_B = 500 - 5p$; and Charlie's demand curve $Q_C = 350 - 7p$. Graph the aggregate demand curve and find the quantity demanded when $p = 20$.

THE SUPPLY CURVE

What shifts the supply curve?

1. Change in price of inputs
2. Change in production technology
3. Expectations
4. Number of sellers in the market

•**Market Supply** : A horizontal summation of firm supply curves. Tells the lowest cost of producing each additional unit of good.

MARKET EQUILIBRIUM

Market equilibrium (q*, p*) occurs when quantity supplied is equal to quantity demanded (The market clearing condition).
$Q_D = Q_S$.

Q3: Suppose $P = 20 - 0.1Q_D$ and $P = 5 + 0.5Q_S$. Find equilibrium price (p*) and quantity (q*).

Q4: Do the following cause a change in demand (shift in demand curve), change in supply (shift in supply curve), change in quantity demanded (movement along demand curve) or change in quantity supplied (movement along supply curve)?

1) The market for Aquafina water. The price of Dasani increases.
2) The market for ground beef. The price of cow-feed increases. -

Think about the drought in the midwest?.
3) The market for hamburger patties. The price of hamburger buns decreases.
4) The market for pistols. Republicans fear that a democratic president will initiate new gun control laws making it more difficult to purchase guns.

Now if time permits...

PRODUCTION POSSIBILITIES FRONTIER AND OPPORTUNITY COST

Table 1: Work per Hour

Person	Lawns	Cars
Larry	1	1
Jake	1	2
Amy	2	1

Q5: What is Jake's opportunity cost of mowing 1 lawn? What are all of the individual's opportunity costs of washing one car? Now construct the production possibilities frontier.