Topic 5 – Efficiency

Big Question – Are some outcomes better than others?

I.   Measuring Economic Surplus

Economic Surplus is the total _____ of market transactions to both consumers and producers.

   a.   Consumer Surplus (CS) $= \sum(Consumers'\ Reservation\ Price - Market\ Price)$

   b.   Producer Surplus (PS) $= \sum(Market\ Price - Producer's\ Reservation\ Price)$

Example: Suppose there are 11 potential buyers of sandwiches, all with different reservation prices. Each person is interested in buying 1 sandwich. Calculate consumer surplus if the market price for sandwiches is $6.

Consumer	Reservation Price	Price	Surplus
Ann Coulter	$11		
Bernie Sanders	$10		
Chris Christie	$9		
Donald J. Trump	$8		
Elizabeth Warren	$7		
Frank Underwood	$6		
Gerry Mandering	$5		
Herman Cain	$4		
Ilhan Omar	$3		
Joe Biden	$2		
Kamala Harris	$1		

CS = _____

II.   Efficiency in the Supply and Demand Model

Pareto Efficiency: *A situation in which it is not possible to make anyone better off without making someone else worse off.*

   a.   In the model of Supply and Demand the efficient (or socially optimal) outcome is the

        outcome that results in _____.

   b.   When markets for private goods are perfectly competitive, total surplus is maximized at the market equilibrium.

   c.   Deadweight Loss (DWL) is the amount of surplus that is lost when the market is not at equilibrium.

Calculate DWL if there are only 2 sandwiches for sale.   DWL = _____

Example: Suppose that supply and demand are given by the following equations.

        Demand: $P = 20 - Q$

        Supply: $P = 4 + Q$

Price

a. Find the equilibrium price and quantity.

Quantity

b. Calculate Consumer Surplus, Producer Surplus, and Total Surplus at the equilibrium.

c. Calculate Total Surplus and Deadweight Loss at $Q = 6$.

III. Efficiency vs. Fairness

Class Activity: Our society (the class) has been endowed with some candy. How should we decide who gets the candy? What is efficient? What is fair?

<u>Proposals</u>

                                          Fair but inefficient:

                                          Efficient but unfair:

Allowing people to trade with each other always _____ efficiency.

Example: Suppose that a small community has one park, which currently does not allow dogs. There is a proposal before the local government to allow dogs to play at the park. The park is small and cannot be divided. Everyone in the community is indifferent (neutral) to the proposal except for 3 people.

One resident (R) favors the proposal.   Two residents (P1 and P2), oppose the proposal.
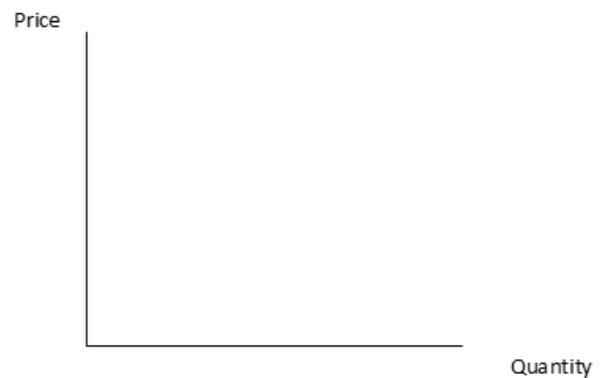R is willing to pay $2500 to allow dogs.   P1 & P2 are each willing to pay $200 to avoid dogs.

Should the park allow dogs?

Example: Suppose that supply and demand are given by the following equations.

Demand: $P = 240 - 2Q$
Supply: $P = 30 + Q$

Price

a.   Find the equilibrium price and quantity.

Quantity

b.   Calculate Consumer Surplus, Producer Surplus, and Total Surplus at the equilibrium.

IV. Assignments

a.   Problem Set 5 due on Brightspace 2/7/20.

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