

Problem Sets 5

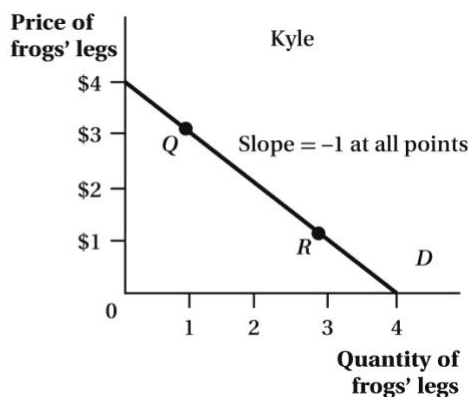
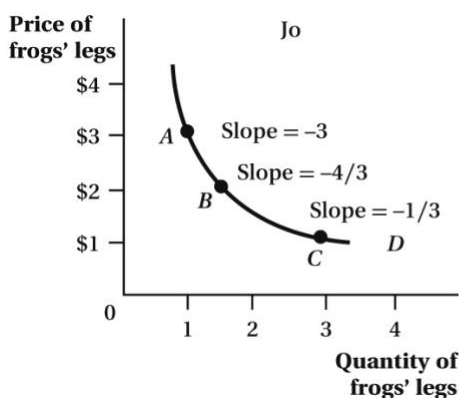
Due in class Oct. 15 F

1. Modeling Market Exchange: Biwei has six apples but Alex has none. Their marginal use values of apple are shown in the table below. Suppose this apple market only consists of Biwei and Alex.

Quantity of Apples	Biwei's Marginal Use Value	Alex's Marginal Use Value
1	\$1.00	\$2.00
2	\$0.90	\$1.60
3	\$0.80	\$1.20
4	\$0.70	\$0.80
5	\$0.60	\$0.40
6	\$0.50	\$0.00

- 1) Define use value and exchange value of an apple. If Alex's marginal use value of apples is greater than the exchange value, what will he do in the apple market as implied by the economic postulate?
- 2) Based on the table, draw Alex's demand curve and Biwei's demand curve for apples, respectively. [Hint: set the marginal use value of an apple equal to the price in the demand schedule.]
- 3) Derive the market demand curve based on Alex's and Biwei's demand curves drawn above. To simplify the process, just draw the curve in a price range from \$0.5 to \$1.
- 4) Calculate the price elasticity of demand at point (3, \$0.8) on Biwei's demand curve and the price elasticity of demand at point (4, \$0.8) on Alex's demand curve. Whose curve is more elastic?
- 5) Based on Biwei's demand curve for apple, draw the supply curve of apple in this economy. [Hint: Biwei is the only supplier in the market and he would sell when $EV > UV$.]
- 6) Describe how this apple market reaches equilibrium when quantity bought and sold are balanced. What are the equilibrium price and quantity exchanged?

2. The Laws of Demand: Jo has an inverse demand for frogs' legs given by $P=3/Q$, while Kyle's inverse demand for frogs' legs is given by $P=4-Q$. Graphs of each consumer's demand curve shown below.



- 1) What would happen to Jo's and Kyle's demand curves when the price of drumstick goes up?
- 2) What would happen to Jo's demand curve when his income goes up?
- 3) At the price of \$4, what are the quantities demanded facing Jo and Kyle?
- 4) At the price of \$1, what are the quantities demanded facing Jo and Kyle?
- 5) How does the aggregate demand curve look like, taking into account both Jo and Kyle?
- 6) If there are only two units of frogs' legs available in the market, how many will be sold to Jo and Kyle, separately? At what prices?
- 7) If there are only three units of frogs' legs available in the market, how many will be sold to Jo and Kyle, separately? At what prices?
- 8) If there are only four units of frogs' legs available in the market, how many will be sold to Jo and Kyle, separately? At what prices?
- 9) Show that Jo's demand for frogs' legs is everywhere unit elastic ($E=1$). What does it mean?
- 10) Show Kyle's elasticity of demand for frogs' legs differs at different points on his demand curve.
- 11) Comment on the difference between the slope of a demand curve and the elasticity of demand. Whose demand is more inelastic, Jo or Kyle?
- 12) To maximize sales revenue, what prices should the frogs' legs company charge Jo and Kyle, respectively?