

Problem Set #1

Sonoma State University
Economics 305- Intermediate Microeconomic Theory

Dr. Cuellar

John Tesh and Kathy Lee Gifford have recorded an album together entitled, *John and Kathy Lee Sing Pearl Jam*. Attempts at increasing revenue from the album have not worked out as hoped, so knowing that you are enrolled in Economics 12, they ask you for some economic advice. Kathy Lee, in an effort to keep the cost down, wants the CD's produced by children in the sweat shops of South East Asia which results in a low price of \$3.00 per CD, and 34 thousand units being sold. John, on the other hand, wants the CD's produced domestically by union workers which would result in a higher price of \$17 per CD with only 6 thousand units being sold.

- (1) Calculate the revenue from the two respective price and quantity combinations:
 $P_1Q_1 = (3,34)$, $P_2Q_2 = (17,6)$. Explain how this is possible.
- (2) Using the two points that have been observed above, derive the equation for a linear demand curve.
- (3) Graph the demand curve from question (2), be sure to show all relevant points. Also, show the relationship between price, quantity and total revenue.
- (4) At what price do consumers no longer purchase this product?
- (5) If this good was given away, say as a promotional strategy, how many units would you need to produce?
- (6) Calculate the price elasticity of demand at each of the two points in question (1). Interpret each.
- (7) If the goal was to maximize revenue, what price should John and Kathy Lee charge? What quantity will be sold?
- (8) Given the price elasticities of demand in question (6), how would you advise John and Kathy Lee in increasing the revenue from their CD sales?

Suppose you want to examine the rental housing situation in the community surrounding Sonoma State University. The average rental rate is currently \$500 per month. There are currently 7,500 units available being rented. Recent econometric studies have produced the following price elasticities of supply and demand for the local housing market: $g^S = .33$ and $g^D = -.33$.

- (9) Using the information provided above, derive the equation for a linear demand curve. Show graphically.
- (10) Using the information provided above, derive the equation for a linear supply curve. Show graphically.