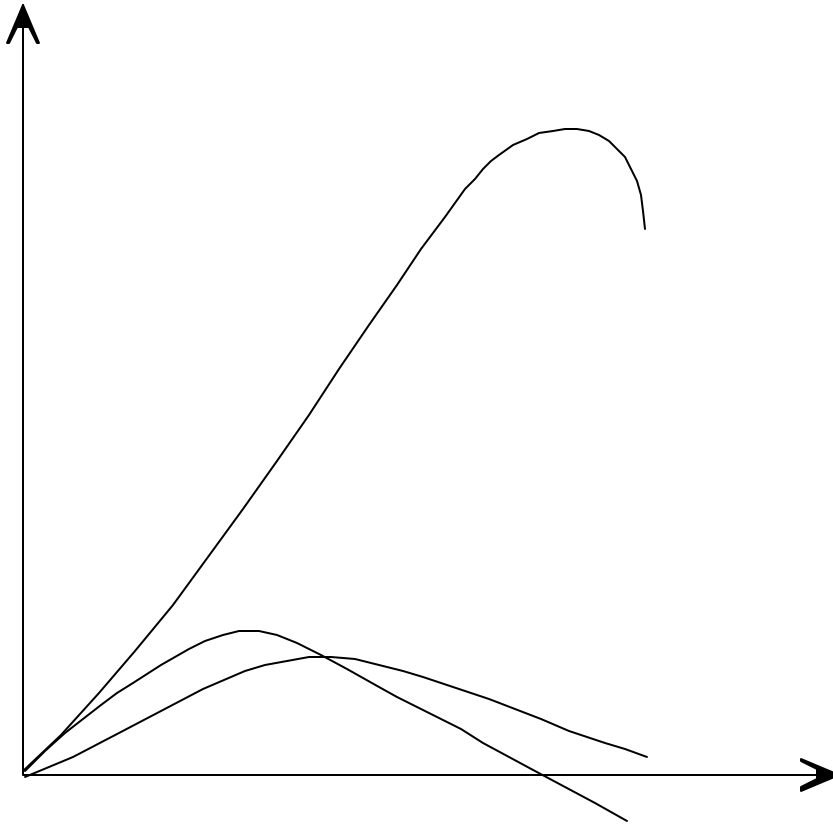


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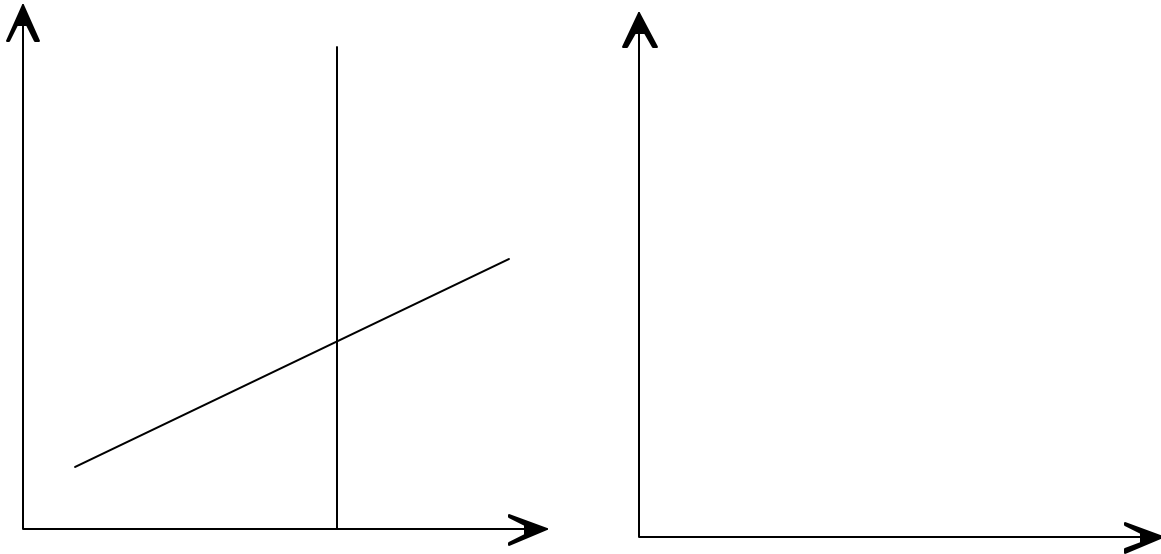
Agricultural Economics 101
Exam #1
October 17, 1990 (revised version)

SHOW ALL WORK



- I. The total physical product (TPP), average physical product (APP) and marginal physical product (MPP) curves are shown above for an input X_1 (water) applied to an output Y (corn). Given these curves:
- Label each curve and both axes.
 - On the graph above, indicate Stage II of the production function.
 - Why is Stage II considered the “rational” area of production?

Note to current students: Questions covering this material will only be on exam 1 if the “economics of production” is covered for this exam. If not on this exam, material will be on exam 2.



III. The left-hand graph above indicates the aggregate or market-level demand and supply curves for a commodity X. In addition, you know that the equilibrium price (P_e) in the market equals \$2.20 and the equilibrium quantity (Q_e) equals 1.20 million units of commodity X. Please do the following:

- (a) Label the market-level supply and demand curves shown above and both axes for the market-level graph.
- (b) On the right-hand graph, graph the farm-level demand curve.
- (c) Determine the absolute value of the own-price elasticity of demand at the farm level.

$$|E_d| = \underline{\hspace{2cm}}$$

- (d) Suppose that the supply of commodity X increases. What impact (increase, decrease, no change) will this change have on the total revenue earned by all producers of commodity X as a group?
- (e) Determine the marginal revenue (MR) for the individual producer when he/she produces 1,000 units of output.

IV. True or False? For those statements that are false, change the statement so that the statement becomes true.

- _____ (a) Changes in income cause changes in the consumer's indifference curves.
- _____ (b) When demand increases, the quantity demanded will not change if supply is perfectly elastic.
- _____ (c) The demand at the farm level is perfectly inelastic.
- _____ (d) Necessities and superior goods are both considered to be "normal goods."
- _____ (e) When the quantity demanded decreases, the demand curve shifts to the left.
- _____ (f) At the equilibrium price (P_e), the quantity of output supplied by producers is Q_e , when the market clears.
- _____ (g) Luxuries are commodities for which the absolute value of the own-price elasticity of demand is greater than 1.0.
- _____ (h) Giffen goods are commodities for which the demand curve is positively sloped.
- _____ (i) The demand for a product is inelastic when the percentage change in the price is greater than the percentage change in quantity (in absolute value terms).
- _____ (k) When the cross-price elasticity for two commodities is positive, the goods are complements.

V. Ed Burger is such an incredible guy! This time he is coordinating the College of Agricultural Sciences' annual fall barbecue and has decided that the menu should include barbecued hot dogs and barbecued chicken wings.

Ed was allocated \$800 to purchase "dogs" and "wings" before ticket sales were over, and he purchased 200 "dogs" at \$2.00/lb. and 400 "wings" at \$1.00/lb. However, now that ticket sales are complete, Ed has been given another \$800 to purchase more "dogs" and more "wings." However, when Ed called in his order for more of both he was told that the price of "wings" had doubled to \$2.00/lb., the same price as that for "dogs." As a result, Ed decided to (additionally) purchase 300 "dogs" at \$2.00/lb. and 100 "wings" at the higher price of \$2.00/lb.

- (a) On the graph below, graph Ed's demand curve for "wings." Be sure to label both axes.
- (b) Is Ed's demand for "wings" elastic, inelastic, or unit elastic? Support your answer.

Graph for V(a)

