

AEC 305 (Fall 2005)

Exam 1 (20%)

Fall 2005

NAME _____

A. True or False: (4 points each). *Identify if the following statement is true or false. If the statement is false correct it to make it true.*

1. True or False. An increase in fertilizer prices (a farm-level input) will cause the farm value of food commodities to fall and increase the marketing bill.
2. True or False. An increase in the USDA market basket index for retail food prices from a value of 200 to a value of 205 indicates a 5% increase in food prices during the relevant period.
3. True or False. A decrease in a commodity price from one period to another would result in its corresponding price relative being negative (i.e. less than zero).
4. True or False. Changes in tastes and preferences for a given food item will always shift the demand curve to the right and thus is not represented by a movement along a given demand curve.
5. True or False. A policymaker attempting to boost total (commodity) revenue would support a policy that would restrict supply for any commodity characterized by an inelastic demand.

B. Short Answer/Calculations

6. Identify the three different approaches to studying agricultural marketing **and** provide a specific example for each approach. (6 points).

1. _____

Example: _____

2. _____

Example: _____

3. _____

Example: _____

7. Assume the marketing costs account for 70% of the price of a retail food product and each unit of this product requires 3 units of a basic agricultural commodity produced by farmers. If the retail food product is currently selling for \$5.00/unit, what does the preceding information imply about the price received by producers on a **per unit** basis for the basic agricultural product? (5 points)
8. On the back of this page are USDA Indices on *Prices Received* and *Prices Paid by U.S. Farmers*. Based on this table, answer the following questions. (4 points each)
- Interpret the **July 2005** index value for “All Farm Products” under *Prices Received* and “Production Items” under *Prices Paid*.
 - Have cotton prices (under *Prices Received*) increased or decreased during this 4 year time frame (2002-July 2005) relative to the base period? How can you tell?
 - What will be the index value (assuming the base period does not change) for cotton in August 2005 if cotton prices increase 5% during August 2005?
 - Calculate the percentage change in fertilizer prices in July 2005 vs. the annual level for 2002.
9. Assume you have been asked to develop a nominal and a real price index for the cost of attending a four year college degree program among colleges in the United States. Provide a paragraph to explain how you would proceed in developing this index. Note: I am asking you to state more than just listing the three components of a price index. Be specific (8 points)

11. Suppose the demand function for apples purchased by a typical household can be represented by the following equation: $Q = 90 - 200 P_1 + 40 P_2 + 0.001 \text{ INC}$

Where: Q = **annual** number of apples purchased

P_1 = price per apple

P_2 = price per orange

INC = annual household income

- a) Calculate the **own-price** and the **cross-price elasticity** of demand for apples for a typical household with a \$50,000 annual income when the price per apple is \$0.50 and the price per orange is \$0.75. (5 points)
- b) Interpret the **own-price** and **cross-price elasticities** you have estimated in 11a. (4 points)
- c) Identify at least **two specific factors** that could have influenced the own-price elasticity of demand for apples that you have calculated for 11a. (4 points)
- d) Based on your answer in 11a **estimate and interpret** the price flexibility coefficient for apples. (4 points)
- e) Based on the above equation are apples considered a normal or inferior good? Why? Note: while you may, there is no need to calculate the income elasticity to answer this question. (4 points)
- f) What additional variable might one include in this equation if one is estimating a market demand curve for apples? (2 points).
- g) If the market demand own-price elasticity is very similar to the household own-price elasticity estimated in 11a, should apple producers seeking to boost total revenue increase price and sell less apples or decrease price and sell more apples? Why? (2 points).