CONCEPT: CROSS-PRICE ELASTICITY OF DEMAND

● The cross-price elasticity of demand helps us gauge whether two goods are substitutes, complements, or unrelated.

Cross-Price Elasticity of Demand: How does quantity demanded respond to the change in price of another product?

$$Cross\ Price\ Elasticity\ of\ Demand = \frac{Percentage\ Change\ (\%\Delta)\ in\ Q_d\ of\ Good\ X}{Percentage\ Change\ (\%\Delta)\ in\ Price\ of\ Good\ Y}$$

□ We still use the _____ in this calculation!

□ For Cross-Price Elasticity of Demand, positive and negative answers make a difference!

Steps for calculating Cross-Price Elasticity:

1. Subtract the two quantities (Good 1) and subtract the two prices (Good 2).
2. Sum the two quantities and sum the two prices.
3. Divide your Quantity Sum by two. Divide your Price Sum by two.
4. Divide your answers from Steps 1 and 3. (Step 1 ÷ Step 3 for both quantity and price)
5. Divide your answers from Step 4. (Quantity ÷ Price)
6. Decide whether quantity and price increased/decreased (+/-)

EXAMPLE: When the price of tennis rackets increased from $45 to $55, the quantity demanded of tennis balls dropped from 21,000 to 19,000. What is the cross-price elasticity of demand?

□ The cross-price elasticity of demand helps us determine the type of product:

- Positive → Substitutes
- Negative → Complements
- Zero → Unrelated

PRACTICE: An increase in the demand for chicken, from 8,000 to 12,000, was caused by an increase in the price of beef from $4.50 to $5.50. Therefore, the cross-price elasticity for these two products is:

a) 0.5
b) -2.0
c) 2.0
d) -0.5

PRACTICE: The cross-price elasticity of demand between apples and oranges is defined as

a) The price elasticity of demand for apples divided by the price elasticity of demand for oranges
b) The change in the quantity of apples demanded divided by the change in the quantity of oranges demanded
c) The percentage change in the quantity of apples demanded divided by the percentage change in the price of oranges
d) The percentage change in the quantity of apples demanded divided by the percentage change in the quantity of oranges demanded