CONCEPT: ELASTICITY AND THE MIDPOINT METHOD

- To make our calculations consistent, we use the midpoint method:

$$Price\ Elasticity\ of\ Demand = \frac{Change\ (\Delta)\ in\ Quantity}{Sum\ of\ Quantities/2} \div \frac{Change\ (\Delta)\ in\ Price}{Sum\ Of\ Prices/2}$$

Steps for calculating Price Elasticity:

1. Subtract the two quantities and subtract the two prices.
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)

EXAMPLE: A pizza company's lunch special currently costs $5. At this price, the weekly demand is 2,000 lunch specials. If they raise their price to $6, the weekly demand will drop to 1,400 lunch specials. What is the price elasticity of demand? Is it elastic or inelastic?

PRACTICE: The price of widgets is currently $44 with a quantity demanded of 200,000 units. If the price decreases to $36, the quantity demanded increases 280,000. Using the midpoint method, what is the price elasticity of demand? Is demand elastic or inelastic?

PRACTICE: The price of a good rises from $8 to $12, and the quantity demanded falls from 110 to 90 units. Using the midpoint method, what is the price elasticity of demand?

a) 1/5
b) 1/2
c) 2
d) 5

PRACTICE: Assume that the price elasticity of demand for cigarettes is 0.4. If a pack of cigarettes currently costs $6 and the government aims to decrease smoking by 20 percent, by how much should it increase the price?

a) $1.20
b) $2.40
c) $3.00
d) $4.80