I. Price Elasticity of Demand

\[ E_D = \frac{\% \Delta \text{ quantity demanded}}{\% \Delta \text{ price}} \]

\[ \frac{\Delta Q}{Q} / \frac{\Delta P}{P} = \frac{\Delta Q}{\Delta P} * \frac{P}{Q} \]

\[ E_D = \left( \frac{dQ}{dP} \right) * \frac{P}{Q} \]

Example:

\[ Q_D(P) = 24-2P, \ P=3, \ Q=18 \]

\[ E_D = -2(3/18) = -1/3 \]

| \( E_D \) | = 1/3

perfectly elastic | \( E_D \) | = \( \infty \)
perfectly inelastic | \( E_D \) | = 0
elastic | \( E_D \) | > 1
inelastic | \( E_D \) | < 1
unit elastic | \( E_D \) | = 1

II. Price Elasticity of Supply

a. Income/cross price elasticity – tell about sensitivity of curve behavior in response to changes in income and other input factors

III. Taxes – Public Economics

a. Sales Tax – ad valorem tax (tax is fraction of price)
b. Gas Tax – specific /unit tax (added per unit sold of a good)