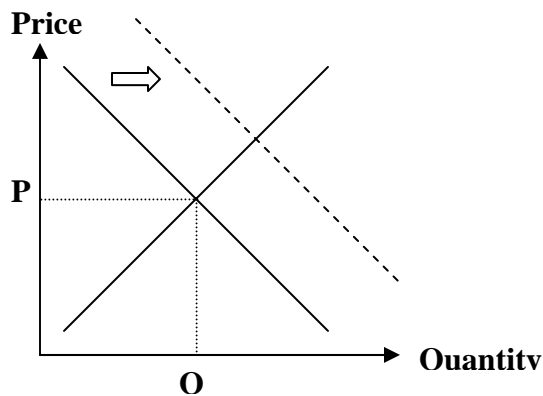


**Finance 30210**  
**Quiz #2**

Name \_\_\_\_\_

Section \_\_\_\_\_

- 1) Suppose that average income rises by 15% in the South Bend area. Explain using supply and demand how this rise in income would impact the local restaurant market (i.e. what should happen to the average price of a meal and the total meals sold).



Rising income raises the demand for restaurant meals. Demand shifts to the right – both price and quantity increases.

- 2) Now, suppose, we know what demand and supply look like for restaurant meals:

$$Q_d = 40 - 2P + 3I$$

$$Q_s = 20 + 2P$$

Where  $Q$  is the number of meals sold (in thousands) per month,  $P$  is the average meal price and  $I$  is average income (in thousands). Assume that average income is equal to \$20,000.

- a) Calculate the equilibrium price and quantity.

$$Q_d = Q_s$$

$$40 - 2P + 3(20) = 20 + 2P$$

$$100 - 2P = 20 + 2P$$

$$80 = 4P$$

$$P = 20$$

$$Q = 60$$

b) Calculate the elasticity of demand at the equilibrium price.

$$\varepsilon = \frac{\% \Delta Q}{\% \Delta P} = \left( \frac{\Delta Q}{\Delta P} \right) \left( \frac{P}{Q} \right)$$

From the demand curve we have that the demand changes by 2 units per dollar change in price and that the point on the demand curve is  $P = 20$  and  $Q = 60$ .

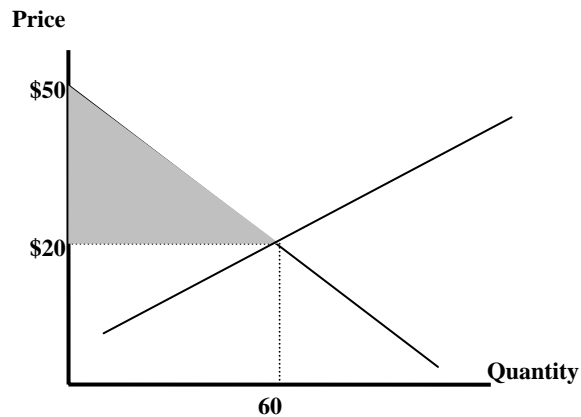
$$\varepsilon = \left( \frac{\Delta Q}{\Delta P} \right) \left( \frac{P}{Q} \right) = -2 \left( \frac{20}{60} \right) = -.67$$

c) Calculate total consumer surplus at the equilibrium market price.

First, solve for the price where demand equals zero:

$$Q_d = 100 - 2P = 0$$

$$P = 50$$



$$\text{Consumer Surplus} = \frac{1}{2} (60)(50-20) = 900$$