

Finance 30210 Problem Set #2 Solutions

- 1) Solutions will be posted soon!!
- 2) Solutions will be posted soon!!
- 2) Suppose that you estimated the following demand curve.

$$Q = 90.5 - 3.36P + .002I$$

Q Represents quantity demanded, P represents price and I represents average income.

You know that the current market price is \$20 and average income is \$20,000

- a) Calculate current demand.

$$Q = 90.5 - 3.36(\$20) + .002(\$20,000) = 63.3$$

- b) Calculate the price elasticity of demand.

$$\varepsilon = 3.36 \left(\frac{20}{63.3} \right) = 1.06$$

- c) Calculate the income elasticity of demand

$$\varepsilon = .002 \left(\frac{20,000}{63.3} \right) = .63$$

How would your answers change if you estimated this demand curve in log form?

$$\ln(Q) = 63.6 - 2.5\ln(P) + .78\ln(I)$$

$$\varepsilon_p = 2.5$$

$$\varepsilon_I = .78$$

- 3) Suppose that you have estimated the following demand curve:

$$Q = 90.5 - 3.36P + .002I$$

You know that the current market price is \$20 and average income is \$20,000.

- a) Calculate the markets total willingness to pay.
- b) Calculate the market's consumer surplus.

First, solve for the price where $Q = 0$.

$$P = \frac{90.5 + .002(\$20,000)}{3.36} = \$38.9$$

$$\text{Consumer Surplus} = (1/2)(38.9 - 20)(63.3) = \$598$$

$$\text{Total Actually Paid} = (63.3)(20) = \$1266$$

$$\text{Total Willingness to Pay} = \$1266 + \$598 = \$1864.$$