

ECON 101

TA Worksheet, Module 5

Name: _____

TA: _____

1. Think of some goods you buy that (for you) have very **inelastic** demand. Why is your demand inelastic for these products?

laundry detergent

cheetos (if you rly like them)

2. My son, Levi, wanted to sell lemonade on the sidewalk by our house. I told him he had to charge **\$1 per cup**. After selling **10 cups** he got tired and gave up. The next day I said he could charge **\$2 per cup**. That day he decided to stay out longer and sold **30 cups**. Using this info, what can we calculate? What number do we get?

price elasticity of supply

$$\epsilon_S = \frac{\% \Delta QS}{\% \Delta P} = \frac{100}{\frac{200}{3}} = \frac{300}{200} = \frac{3}{2} = 1.5$$

$$\% \Delta QS = \left(\frac{30 - 10}{\frac{30 + 10}{2}} \right) \times 100 = 100$$

$$\% \Delta P = \left(\frac{2 - 1}{\frac{2 + 1}{2}} \right) \times 100 = \frac{2}{3}(100) = \frac{200}{3}$$

3. Suppose we have this demand curve: **$Q = 20 - 0.5P$** . What is the price elasticity of demand if the price falls from **6** to **4**?

$$Q_1 = 20 - 0.5(6) = 20 - 3 = 17$$

$$Q_2 = 20 - 0.5(4) = 20 - 2 = 18$$

$$\epsilon_D = \frac{\% \Delta QD}{\% \Delta P} = \frac{\frac{18 - 17}{\frac{18 + 17}{2}}}{\frac{4 - 6}{4 + 6}} = \frac{\frac{1}{35}}{\frac{-2}{10}} = \frac{-10}{70} = -\frac{1}{7}$$

4. Suppose two goods are **PERFECT complements** (you never buy one without buying the other). How does the cross-price elasticity of demand relate to the products' PRICE elasticity of demand?

$$\epsilon_{AB} = \frac{\% \Delta QD(A)}{\% \Delta P(B)}$$

$$\epsilon_{AB} = \epsilon_B$$

$$\epsilon_B = \frac{\% \Delta QD(B)}{\% \Delta P(B)}$$

5. At a price of **\$12/dozen**, Doug's 'Nuts sells **100 dozen doughnuts**. At a price of **\$8/dozen** Doug's would sell **200 dozen**. Is demand elastic or inelastic?

$$\epsilon_D = \frac{\% \Delta QD}{\% \Delta P} = \frac{\frac{200 - 100}{\frac{200 + 100}{2}}}{\frac{8 - 12}{8 + 12}} = \frac{\frac{100}{300}}{\frac{-4}{20}} = \frac{2000}{-1200} = \frac{20}{-12} = -1.7$$

$1.7 > 1 \rightarrow$ elastic demand

$$\epsilon_D = 1.7$$