

Quiz #1 Postmortem

IDENTIFICATION: (30 points) Here are three pairs of concept.

For each pair, explain the similarities and differences between the two concepts:

1. $h_y = \frac{\partial q}{\partial y} \frac{y}{q}$ $\eta_p = -\frac{\partial q}{\partial p} \frac{p}{q}$ are income and price elasticities (point not arc), which measure the sensitivity of quantity sold to changes in income and price, respectively. Loosely speaking, they show the percentage change in quantity sold resulting from a 1% change in income or price.
2. The minimum wage and farm price supports are examples of price floors prohibiting the sale of a service or commodity below a specified price. When the price is kept above the equilibrium level, demand is reduced below the equilibrium quantity while supply is above the equilibrium—the gap between demand and supply is a “surplus.” Surpluses are created by price floors.
3. Competition versus oligopoly are two forms of market organization: Under competition there are so many buyers and sellers of the same product that no one can influence the price: sellers can market all they want at the equilibrium price but sell nothing above it; buyers can purchase all they want at the equilibrium price but nothing below it. In an oligopolistic market there are a few sellers, each setting its own price; often but not always the products are differentiated (e.g. a Toyota versus a Ford) rather than identical; how much each oligopolistic seller can market depends on its own price and the price charged by other firms in the market.

II. MARKETS: (30 points) The demand function for wheat is $q_d = 250p^{-2}$. The supply function is $q_s = 2p$, where q_d is the number of bushels demanded, q_s is supply and p is price.

- a. In equilibrium, $q_d = 250p^{-2} = 2p = q_s$; hence,
 $250 = 2p^3$ or $p = 5$; therefore $q = 10$.
- b. $dq/dp = -500p^{-3}$; hence $\eta_p = 500p^{-3}(p/q) =$
 $2(250p^{-2}/p)(p/q) = 2(q/p)(p/q) = 2$.
(Note: This is a constant elasticity demand curve)

III. 1. Points $\langle 250, 500 \rangle$ is on Britain's production transformation curve and $\langle 200, 450 \rangle$ is on Portugal's; therefore, both countries are producing efficiently.

2. However, if Britain produced 1000 of wool and Portugal 750 of wine, world output of the two commodities would be higher! Therefore, production in the two country world is not efficient.

3. The production function for the two country world is piece-wise linear (kinky production possibility curve):

$$\text{Wool} = 1750 - 1.5 \text{ Wine}, \text{ for } 0 \Leftrightarrow \text{wine} \Leftrightarrow 500 \quad (\text{Britain produces only wool})$$

$$\text{Wool} = 1000 - 2(\text{wine} - 500), \text{ for } 500 \Leftrightarrow \text{wine} \Leftrightarrow 1000 \quad (\text{Portugal produces only wine})$$

4. Ricardo argued that both countries can potentially gain from trade because then each country can specialize in the production of the commodity for which it has the lowest opportunity cost (comparative advantage). Workers in both countries can gain, although Portugal's workers may earn more because they are more productive. Note that output per worker may be higher in Portugal because of a better climate, more capital equipment, or more educated workers even when British workers are operating efficiently.

Your grade is the circled number on the exam; the average grade was 85.