

ECO5002 Introduction to Economics

Quiz 1

(Total Points: 30pts, Due on August 4th, 2024)

1 Question 1

Answer the following questions with necessary explanations:

1. **(2pts)** What is the most important assumption in Economics?
2. **(2pts)** What role should a government play in a modern society?
3. **(2pts)** Can externality be solved without government interventions?
4. **(2pts)** What are the advantages and disadvantages of tariffs?
5. **(2pts)** Evaluate the statement: *without intermediaries, patients would get cheaper medicines because hospitals purchase medicines directly from drug factories.*

2 Question 2

Using the supply-demand framework that we discussed in the class, show the effect of the following three events on the market for sweatshirts.

1. **(2pts)** A hurricane in South Carolina damages the cotton crop.
2. **(2pts)** The price of leather jackets falls.
3. **(2pts)** New knitting machines are invented.

3 Question 3

Suppose the demand curve is

$$Q^D = \frac{1}{P}.$$

1. **(2pts)** Use the midpoint method to calculate the price elasticity of demand between the point $(Q_1^D, P_1) = (1, 1)$ and the point $(Q_2^D, P_2) = (0.5, 2)$.
2. **(2pts)** Is the price elasticity of demand constant at every point on this curve?

4 Question 4

Suppose that a market is described by the following supply and demand equations:

$$Q^S = 2P,$$

$$Q^D = 300 - P.$$

1. **(2pts)** Solve for the equilibrium price and the equilibrium quantity.
2. **(2pts)** Suppose a tax of T is placed on buyers, so the new demand equation is

$$Q^D = 300 - (P + T).$$

Solve for the new equilibrium. What happens to the price received by sellers, the price paid by buyers, and the quantity sold?

3. **(2pts)** Tax revenue is $T \times Q$. Use your answer from part 2 to solve for tax revenue as a function of T . Graph this relationship for T between 0 and 300.
4. **(2pts)** The dead-weight loss of a tax is the area of the triangle between the supply and demand curves. Solve for dead-weight loss as a function of T . Graph this relationship for T between 0 and 300.
5. **(2pts)** The government now levies a tax of \$200 per unit on this good. Is this a good policy? Why or why not? Can you propose a better policy?