• Name: _____

• Date: _____

BUSN 301: Intermediate Microeconomic Theory

Quiz #2

Spring 2026

INSTRUCTIONS:

• Each quiz is graded on a 100-point basis and contributes to your Quiz component of the course grade.

• You are expected to show all relevant steps and reasoning.

• Answers must be clearly written and well-organized.

• Graphs, when required, must be clearly labeled, with axes, curves, and key points identified.

Problem 1. Elasticities   **(6 Points Each)**

Let m be the consumer's income, and p_1 be the unit price of good 1. Suppose that a consumer's demand for a good is given by:

$$x_1(p_1, p_2, m) = p_1^{-0.3} p_2^{0.4} m^{1.2}$$

1.A. Compute the income elasticity of demand for good 1.

1.B. If income increases by 5%, by how much does quantity demanded change?

1.C. Compute the own-price elasticity of demand for good 1.

1.D. If price increases by 5%, what happens to the consumer's total expenditure on good 1? Briefly explain.

Problem 2. Individual to Market Demand   **(6 Points Each)**

Suppose there are two consumers in a market for a single good. Individual demands are given by:

$$x_A(p) = 40 - p, \quad x_B(p) = 60 - \frac{2}{3}p$$

Assume that each consumer's demand cannot be negative, so that $x_i(p) \geq 0$, and that $p \geq 0$.

2.A. Compute the choke price (the price at which quantity demanded becomes zero) for each consumer.

2.B. Derive the market demand function $X(p)$. Write your answer as a piecewise function.

2.C. (Extra Credit: 2 Points) Suppose that the market supply function is given by:

$$S(p) = \frac{1}{3}p$$

Find the equilibrium price and quantity in this market.

Problem 3. Competitive Equilibrium and Welfare   **(6 Points Each)**

Suppose market demand and supply in a competitive market are given by:

$$D(p) = 120 - 2p, \quad S(p) = 3p$$

3.A. Determine the equilibrium price p^* and quantity q^*.

3.B. Compute consumer surplus and producer surplus at the equilibrium.

Suppose that due to an increase in costs, the market supply is now: $S'(p) = 3p - 10$.

3.C. Determine the new equilibrium price p' and quantity q'.

3.D. Compute consumer surplus and producer surplus at the new equilibrium.

3.E. Draw a single graph showing $D(p)$, $S(p)$, and $S'(p)$. Clearly label all intercepts and the equilibrium points, and shade the areas representing the new consumer surplus and producer surplus.

Problem 4. Taxation, Incidence, and Deadweight Loss   **(6 Points Each)**

Suppose market demand and supply in a competitive market are (identical to Problem 3):

$$D(p) = 120 - 2p, \quad S(p) = 3p$$

Now suppose that the government imposes a per-unit tax of $t = 5$.

4.A. At the original equilibrium (before the tax), compute the price elasticity of demand and the price elasticity of supply.

4.B. Find the price paid by consumers p_d, the price received by producers p_s, and the quantity traded in the post-tax market q_t.

4.C. Compute the per-unit tax burden on consumers and producers.

4.D. Compute total tax revenue and the deadweight loss of the tax.

Problem 4. Taxation, Incidence, and Deadweight Loss (continued)   **(6 Points Each)**

4.E. Based on your answers to 4.A, which side of the market should bear more of the tax burden? Does this match your answer in 4.B? Briefly explain.

Suppose that instead of the per-unit tax, the government grants a per-unit subsidy of $s = 5$

4.F. (Extra Credit:2 Points) Find the price paid by consumers p_d, the price received by producers p_s, and the quantity traded in the post-subsidy market q_s.

4.G. (Extra Credit:2 Points) Compute total subsidy expenditure and the deadweight loss of the subsidy.

Problem 5. Feedback **(1 Point Each)**

5.A. Which chapter(s) that were covered in this quiz did you find challenging? (Select all that apply.)

- Chapter 6: Demand (e.g., elasticities, total revenue)
- Chapter 14: Consumer's Surplus (e.g., reservation price, willingness to pay)
- Chapter 15: Market Demand (e.g., horizontal summation, piecewise demand)
- Chapter 16: Equilibrium (e.g., competitive equilibrium, taxation)

Briefly explain why you found this part challenging (1–2 sentences).

5.B. At this point in the course, which statement best describes you?

- I understand the ideas conceptually but struggle with the math
- I can do the math but do not always understand what it means
- I am comfortable with both the math and the intuition
- I feel lost and am not sure where my confusion starts

Briefly say what would help most in class.

- Original Score: _____

- Original Date: _____

- Recovered Score: _____

- Recovered Date: _____