CONCORDIA COLLEGE
MOORHEAD, MINNESOTA

- Name: ______________________
- Date: ______________________
- Section: ______________________

BUS 201: Principles of Global Economics

Problem Set #6: Suggested Solutions

Fall 2025

INSTRUCTIONS:

- Write your full name, date, and section clearly at the top of the first page.
- This problem set is designed as a check-in assignment to help you practice the core ideas. It is not intended to be difficult, but you are expected to think carefully about your answers.
- For multiple-choice problems, circle the best answer.
- For short-answer problems, limit your response to no more than 4 sentences. Be concise but complete, and use economic reasoning in your answers.
- You may use your textbook, lecture slides, and personal notes.

Problem 1. Multiple Choice

1.A. A natural monopoly arises when:

- **a) Average total cost decreases over the entire range of demand.**
- b) Firms can freely enter the market in the long run.
- c) The market demand curve is perfectly elastic.
- d) Marginal cost rises sharply as output increases.

1.B. For a monopolist, marginal revenue is:

- a) Equal to price at all output levels.
- **b) Less than price because increasing output reduces the market price.**
- c) Greater than price whenever demand is elastic.
- d) Irrelevant for determining the profit-maximizing quantity.

1.C. In long-run monopolistic competition, firms earn zero economic profit because:

- a) Marginal revenue always equals marginal cost.
- b) Demand becomes perfectly inelastic.
- **c) Free entry shifts each firm's demand curve to the left.**
- d) Firms eventually produce at minimum average total cost.

1.D. In a standard prisoner's dilemma game, both players choose to defect because:

- **a) Defection is a dominant strategy for each player.**
- b) Cooperation yields the highest individual payoff.
- c) Players cannot observe each other's decisions.
- d) Defection increases total surplus for the group.

1.E. Under oligopoly, the market outcome typically features:

- a) A price equal to marginal cost.
- b) A quantity equal to the monopoly quantity.
- **c) A price between the monopoly and competitive price.**
- d) Zero deadweight loss.

Problem 1. Multiple Choice (continued)

1.F. A monopolist produces less than the socially efficient quantity primarily because:

a) Price always equals marginal cost.
b) Average total cost is constant across output levels.
c) The market has no barriers to entry.
d) Marginal revenue is below the demand curve.

1.G. Price discrimination increases a monopolist's profit because it:

a) Forces all consumers to pay the same price.
b) Charges each consumer based on marginal cost.
c) Allows the firm to capture more consumer willingness to pay.
d) Eliminates the need to consider demand elasticity.

1.H. In an oligopoly, firms often face a prisoner's dilemma because:

a) Cooperation is illegal under all circumstances.
b) Each firm has an incentive to undercut the agreement for individual gain.
c) Cooperation always leads to zero profit.
d) Firms do not consider the actions of their rivals.

1.I. Under monopolistic competition, excess capacity occurs because:

a) Firms operate on the downward-sloping portion of average total cost.
b) Firms produce at the minimum of average total cost.
c) Marginal cost exceeds marginal revenue at all outputs.
d) Products are identical across all firms.

1.J. According to Hotelling's Law, firms competing for the same customers have incentives to:

a) Maximize product variety.
b) Differentiate as much as possible on every dimension.
c) Move their products or positions closer to the market median.
d) Charge the monopoly price.

Problem 2. True / False

Determine whether each statement is TRUE or FALSE. If you deem that the statement is FALSE, you MUST justify your verdict by providing a brief explanation.

2.A. A monopolist's marginal revenue is always less than the price of the good.

- TRUE

2.B. Price discrimination can increase total surplus by allowing more consumers to purchase the good.

- TRUE

2.C. In long-run monopolistic competition, firms produce at the minimum of average total cost.

- FALSE
- In long-run monopolistic competition, firms face downward-sloping demand and choose an output where price exceeds marginal cost. They operate with excess capacity, producing to the left of the minimum of ATC.

2.D. In a prisoner's dilemma, the dominant strategy for each player leads to an outcome that is worse for both players than mutual cooperation.

- TRUE

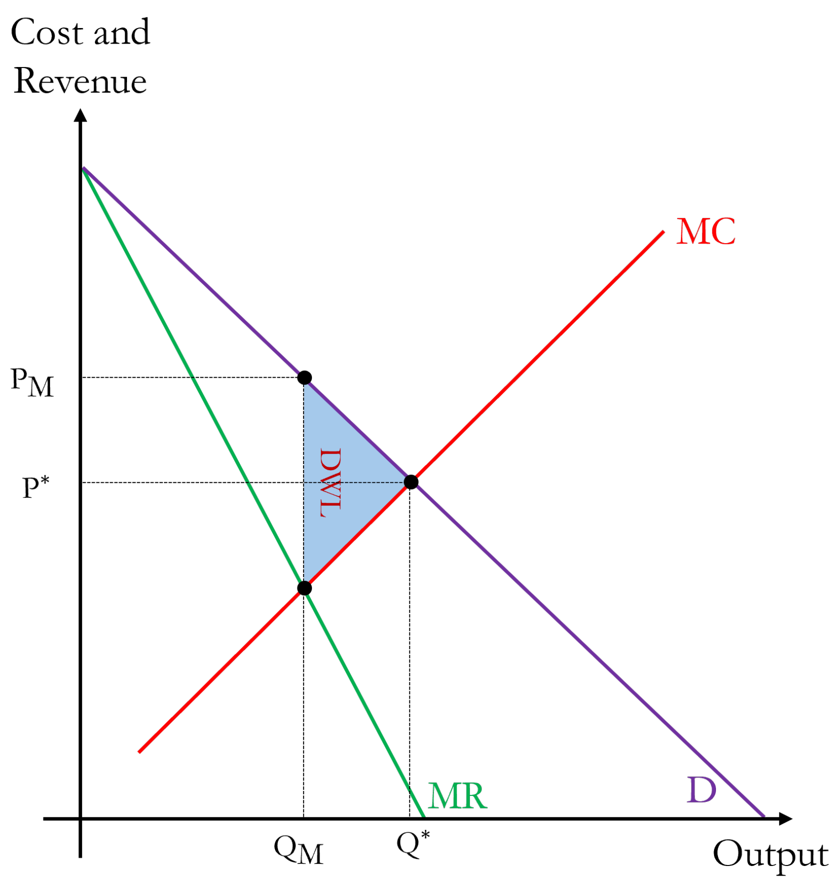
2.E. An oligopoly always yields the same outcome as a monopoly because firms can easily coordinate output and prices.

- FALSE
- Collusion is hard to sustain and often illegal. In equilibrium, oligopoly typically leads to output between the monopoly and competitive levels, not identical to monopoly.

Problem 3. Short Answer

3.A. The graph below represents a monopolist facing a downward-sloping market demand curve. On the graph provided below, complete the following tasks.

- Label the monopoly quantity and price, Q_M and P_M.
- Identify and label the efficient quantity and price, Q^* and P^*.
- Shade and label the deadweight loss region created by monopoly pricing.
- Briefly explain why this deadweight loss arises in a monopoly market.



- The monopolist sets quantity where marginal revenue equals marginal cost, which is less than the quantity where demand equals marginal cost. At the monopoly quantity, price is above marginal cost, so some units for which consumers' willingness to pay exceeds MC are not produced. These foregone trades reduce total surplus relative to the competitive outcome, creating a deadweight loss.

Problem 3. Short Answer

3.B. Mordor and Isengard produce a standardized good: orc armor. The two powers agree to collude and restrict production to the monopoly level, splitting output evenly so that each earns high profits. Assume that the marginal cost of producing orc armor is zero for both Mordor and Isengard. Using the table below, complete the following tasks:

Quantity	Price	Joint Profit
100	$230	$23,000
200	$210	$42,000
300	$190	$57,000
400	$170	$68,000
500	$150	$75,000
600	$130	$78,000
700	$110	$77,000
800	$90	$72,000
900	$70	$63,000
1000	$50	$50,000

- Compute the joint profit at each level of total output. Enter the joint profit values directly into the table.
- Determine the output level that maximizes joint profit. How many units of orc armor does each party produce?
  - Joint profit is maximized at 600 units, so each party should produce 300 units. Each party earns $\$130 \times 300 = \$39,000$.
- Explain, from Mordor's perspective, why you would have an incentive to break the agreement, using the numbers on the table.
  - If Mordor unilaterally increases its output to 400 units, the quantity supplied in the market increases to 700 units, and the price falls to $110. Under this arrangement, Mordor can earn $\$110 \times 400 = \$44,000$, more than the collusion profit of $39,000.
- Based on the incentives shown in the table, identify the total output level at which neither Mordor nor Isengard would want to change their own production unilaterally.
  - Mordor and Isengard will both produce 400 units of orc armor for a combined output of 800, each earning $36,000 in profits.

Problem 3. Short Answer

3.C. Two competing smartphone manufacturers must simultaneously choose one of three pricing strategies for their upcoming product launch: Economy Pricing (E), Standard Pricing (S), Premium Pricing (P). Their resulting profits (in millions of dollars) are shown below in ordered pairs (A's profit, B's profit). Using the payoff matrix below, answer the following:

		B: E	B: S	B: P
A	E	(30,40)	(20,30)	(55,35)
A	S	(50,25)	(60,50)	(30,20)
A	P	(70,45)	(40,40)	(25,15)

- For each pricing strategy chosen by producer B, identify producer A's best response.
  - If B plays E: A's best response is P (earning 70)
  - If B plays S: A's best response is S (earning 60)
  - If B plays P: A's best response is E (earning 55)
- For each pricing strategy chosen by producer A, identify producer B's best response.
  - If A plays E: B's best response is E (earning 40)
  - If A plays S: B's best response is S (earning 50)
  - If A plays P: B's best response is E (earning 45)
- Identify all Nash equilibria of this game.
  - The two Nash Equilibria in this game are (S,S) and (P,E).

- Original Score: ____________
- Original Date: ____________
- Recovered Score: ____________
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