

Assignment 1 (Optional)

Total Marks: 50

Part A True/ False/ Uncertain Questions

Explain why the following statement is True, False, or Uncertain according to economic principles. Use diagrams and / or numerical examples where appropriate. Unsupported answers will receive no marks. It is the explanation that is important. Each question is worth 10 marks.

A1.

A monopoly produces a Pareto inefficient level of output at the equilibrium. [Diagrams Required]

A2.

In a location model of product differentiation with only two firms, the equilibrium location pattern is Pareto efficient. [Diagrams Required]

Part B

Problem Solving Questions

Read each part of the question very carefully. Show all the steps of your calculations to get full marks.

B1. [15 Marks]

The monopolist faces a demand curve given by $D(p) = 100 - p$. Its total cost function is $c(y) = 700 + 20y$.

- (a) Calculate the monopoly output level, the monopoly price, and the profits of the firm. Calculate the deadweight loss from this monopoly. [4 marks]
- (b) Draw a diagram to illustrate your answers to part (a). [2 marks]
- (c) Explain why this market might be considered to be a “natural” monopoly. [2 marks]
- (d) If the government regulates the monopolist by imposing average cost pricing, what will be the monopolist’s price and quantity? Draw a diagram to illustrate your answers. Explain the problem that exists with this average cost pricing. [4 marks]
- (e) Illustrate and explain the problem that emerges when the government regulates the monopolist by imposing marginal cost pricing. What level of subsidy should the government provide to the monopolist if the government wants to overcome this problem? [3 marks]

B2. [15 Marks]

Suppose the market demand can be separated into two distinct markets, where $p_1 = 80 - 5y_1$, $p_2 = 180 - 20y_2$, and the common total cost function is $C = 50 + 40(y_1 + y_2)$.

- (a) Determine the equilibrium price and quantity in each market and the overall profit that result from the actions of a price discriminating monopolist. Draw a diagram to illustrate your answers. [8 marks]
- (b) Determine the price elasticity of demand in each market, evaluated at the equilibrium price and quantity. [3 marks]
- (c) What is the relationship between the price elasticity of demand in each market and the price prevailing in each market? [2 marks]
- (d) Suppose now that the government imposes a 10% tax on the overall profit of the monopolist. Explain what will be the monopolist’s equilibrium price and quantity in each market under this form of taxation? [2 marks]