

2. The graph provided depicts New Zealand's domestic supply and demand for wool.

(a) Calculate the consumer surplus if New Zealand does not trade with the rest of the world. Show your work.

(b) Instead, assume New Zealand decides to trade wool in the world market. The current world price of wool is \$60 per unit, and New Zealand is a price taker in the world market.

(i) How many units of wool will New Zealand export?

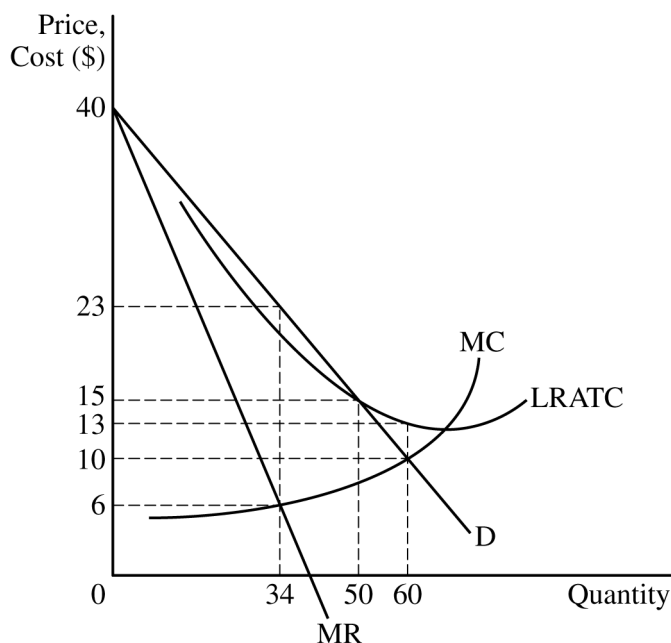
(ii) What will happen to the consumer surplus of wool consumers in New Zealand when New Zealand begins to trade with the rest of the world? Explain.

(iii) Will total economic surplus in New Zealand increase, decrease, or remain unchanged when New Zealand begins to trade wool in the world market? Explain using numbers.

(c) Now assume domestic demand in New Zealand increases. Will New Zealand's exports increase, decrease, or stay the same?

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

3. The graph provided shows the demand (D), long-run average total cost (LRATC), marginal cost (MC), and marginal revenue (MR) curves for a natural monopoly.



- (a) Over the output range of 0 to 60 units, is this firm experiencing economies of scale, diseconomies of scale, or constant returns to scale? Explain.
- (b) Using numbers from the graph, identify the price and quantity produced at which the monopolist earns zero economic profit.
- (c) Assume that regulators impose a price ceiling that results in the firm producing the socially optimal quantity in the short run.
- Calculate the total revenue at the price ceiling. Show your work.
 - Explain why the firm requires a subsidy to continue producing in the long run.
 - Calculate the lump-sum subsidy that would be required for the monopolist to produce the socially optimal quantity in the long run. Show your work.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

Question 2: Short**5 points**

- (a) Calculate the consumer surplus in New Zealand before trade as \$4,500 and show your work. **1 point**

$$\text{Consumer Surplus} = \frac{1}{2} \times 300 \times (\$70 - \$40) = \frac{1}{2} \times 300 \times \$30 = \frac{\$9,000}{2} = \$4,500$$

- (b) (i) State that New Zealand will export 400 units of wool. **1 point**

- (ii) State that consumer surplus in New Zealand will decrease and explain with **ONE** of the following: **1 point**

- The domestic price will increase to the world price, which decreases the domestic quantity demanded of wool.
- The consumer surplus decreased from \$4,500 before trade to \$500 after trade.

- (iii) State that total economic surplus in New Zealand will increase by \$4,000 and explain that producer surplus will increase by \$8,000 while consumer surplus will decrease by \$4,000, resulting in an increase in total economic surplus. **1 point**

Total for part (b) 3 points

- (c) State that New Zealand's exports will decrease. **1 point**

Total for question 2 5 points