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3

91400



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## Level 3 Economics, 2015

### 91400 Demonstrate understanding of the efficiency of different market structures using marginal analysis

2.00 p.m. Wednesday 18 November 2015

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of the efficiency of different market structures using marginal analysis.	Demonstrate in-depth understanding of the efficiency of different market structures using marginal analysis.	Demonstrate comprehensive understanding of the efficiency of different market structures using marginal analysis.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–10 in the correct order and that none of these pages is blank.

**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

Not Achieved

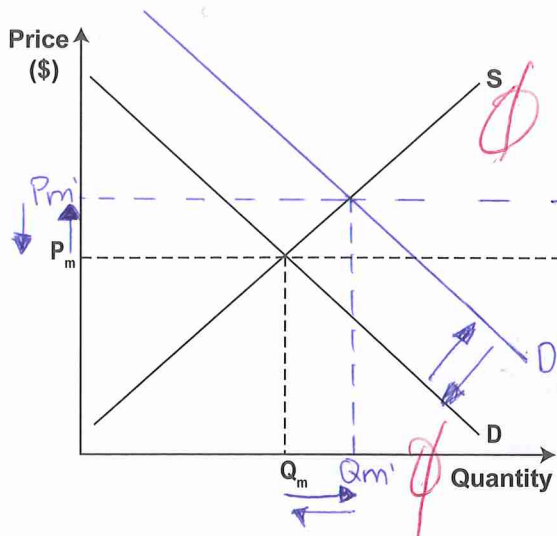
TOTAL

5

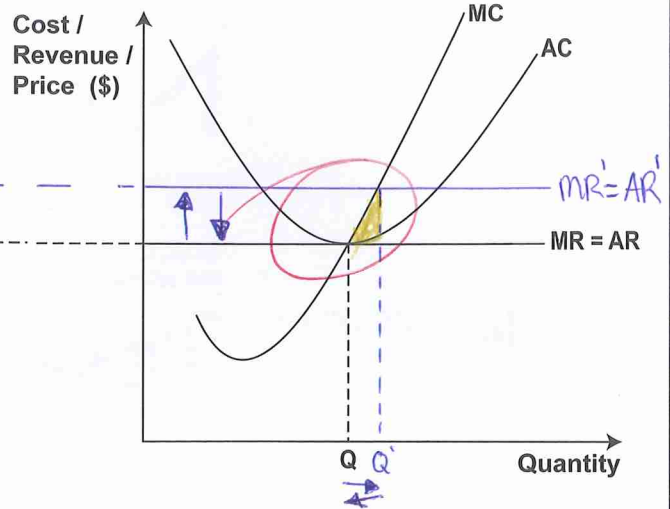
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## QUESTION ONE: PERFECT COMPETITION

Graph One: The market



Graph Two: The individual perfectly competitive firm



- (a) (i) Complete Graph One to show the impact of an increase in market demand on the market equilibrium price and quantity. Label the new price  $P_{m1}$  and the new quantity  $Q_{m1}$ .
- (ii) Complete Graph Two to show the impact of an increase in market demand on the short-run profit maximising level of output for the individual firm. Label the new level of output as  $Q_1$ .
- (iii) On Graph Two, clearly shade and label the new level of economic profit that will be earned by the individual firm at  $Q_1$ . Identify the economic profit as normal, subnormal, or supernormal. *This individual perfectly competitive firm is making a supernormal profit*
- (b) Use **marginal analysis** to compare and contrast the short-run and long-run profit and output decisions of a perfect competitor after an increase in market demand.
- In your answer:
- explain in detail the changes to the short-run level of output and profit for the individual firm as a result of the increase in market demand
  - make changes to Graph One to show how the market equilibrium price and quantity will be affected in the long run
  - explain how the long-run changes in the market will affect the long-run levels of output and profit for the individual firm
  - refer to Graph One and Graph Two.

*The increase in market demand changes the level of output and profit of a perfectly competitive firm in the ~~long~~ short-run. The increase in market demand causes the level of output of a perfectly competitive firm to increase because in order to sustain*



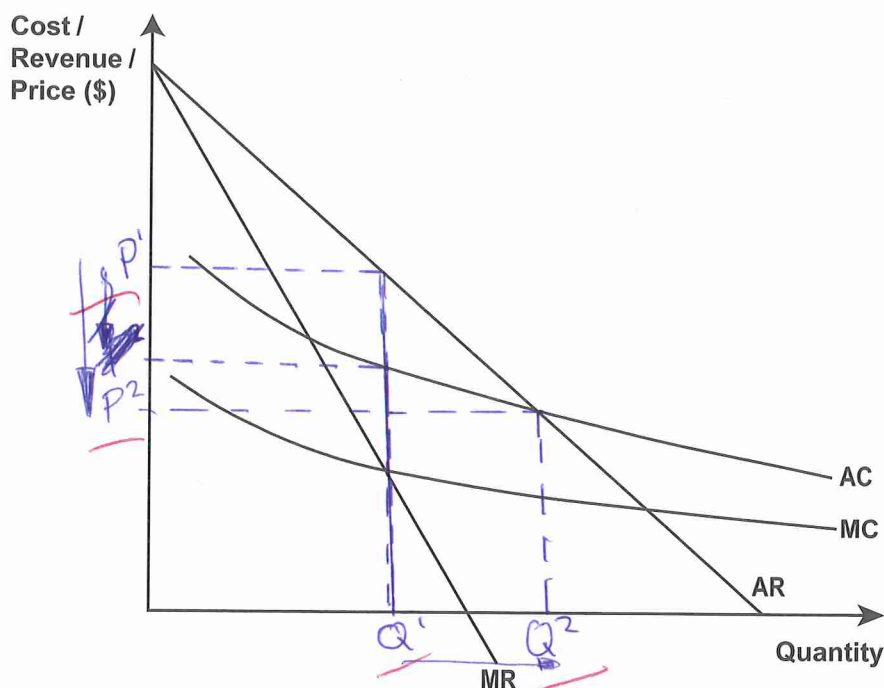
The increase in demand they will need to produce more this is represented on Graph two by  $Q - Q'$ . As the firm produces more they sell more due to the increase in demand therefore resulting in an increase profits, the increase from making a normal profit to making a supernormal profit in the short run. In the long run market demand will decrease from  $D'$  to  $D$  & as shown on graph one. Therefore resulting in a decrease in both the market equilibrium price  $(P_m')$  and the market equilibrium output  $(Q_m')$ . It will decrease in the long run back to where it was before the increase in market demand. This is shown on the Graph one by  $P_m' \rightarrow P_m$  and  $Q_m' \rightarrow Q_m$  therefore meaning a perfectly competitive firm within this market who was making supernormal profit because they were producing at the level of output represented by  $Q'$  will go back to producing at  $Q$  in the long run ~~because~~ and make normal profits. There are many factors that cause the demand ~~with in~~ within this market to decrease back to where it was before the initial increase. It could be because more firms within this market began producing and supplying more, and as quantity supplied increase quantity demanded decrease.

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## QUESTION TWO: NATURAL MONOPOLY

KiwiRail is a state-owned enterprise that was nationalised (bought back by the Government) in 2008. It can be considered an example of a natural monopoly in the New Zealand market for rail transport.

Graph Three: The New Zealand market for rail transport



- (a) On Graph Three, label the profit maximising price ( $P_1$ ) and quantity ( $Q_1$ ).

One of the main benefits of KiwiRail being nationalised is that the Government can regulate a price that will encourage greater use of rail transport. Average cost pricing would be one method of achieving this objective.

- (b) Compare and contrast the impact on consumers, KiwiRail, and allocative efficiency of regulating average cost pricing. Assume KiwiRail is initially at the profit maximising equilibrium of  $P_1$  and  $Q_1$ .

In your answer:

- on Graph Three, identify the price ( $P_2$ ) and quantity ( $Q_2$ ) of rail services that would be provided if regulated average cost pricing was used by KiwiRail
- explain in detail the impact of regulated average cost pricing on consumers of rail transport and consumer surplus
- explain in detail the impact of regulated average cost pricing on KiwiRail's economic profit
- explain in detail why regulated average cost pricing would result in a more allocatively efficient outcome compared to the profit maximising equilibrium
- refer to Graph Three.

This would benefit consumers of rail transport because they will no longer have to pay the amount



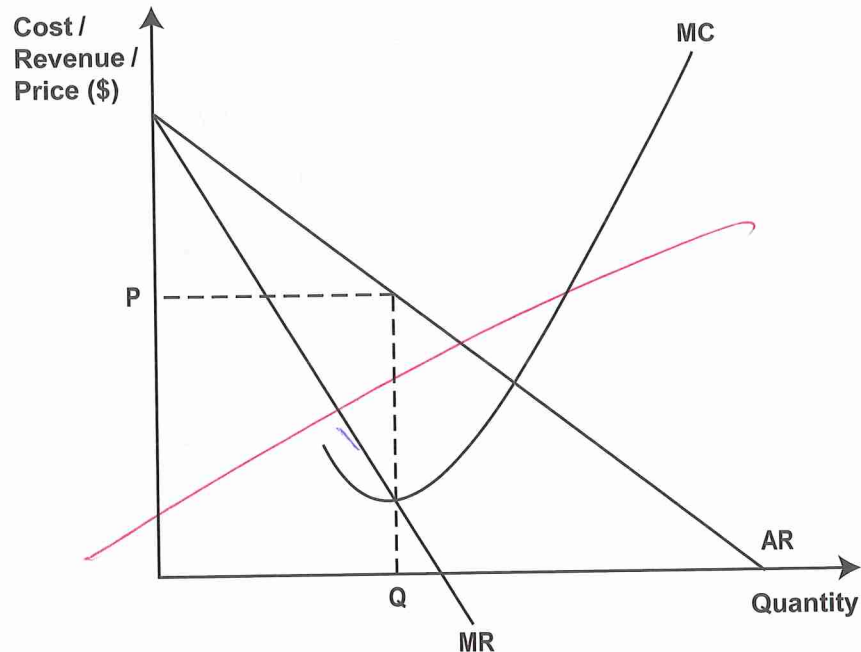
they previously did at the profit maximising equilibrium of  $P' = Q'$ . Instead they will only have to less which means that there is an increase in consumer surplus. This may result in a decrease in KiwiRail's economic profit because they will not be charging for rail transport at the profit maximising equilibrium. But even though they are pricing ~~there~~ their services for less they will have an increase in ~~quantity~~ quantity demanded as a result of rail transport prices becoming cheaper therefore meaning they may not have a very significant decrease in profits, if any. This would be more allocatively efficient because Kiwi Rail will be providing more rail transport at a decreased (more affordable) price (this is represented on graph 3 by  $P^2 = Q^2$ ) whereas at ~~pro~~ the profit maximising equilibrium Kiwi Rail are providing less Rail transport at an increased price therefore benefiting them ~~&~~ and their profits but not the consumers (this is represented on graph 3 by  $P' = Q'$ ).

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91400

On 1 April 2014, the New Zealand minimum wage was increased to \$14.25. This would have resulted in a significant increase in labour costs for firms that were paying workers the previous figure of \$13.75.

### Graph Four: A monopoly market



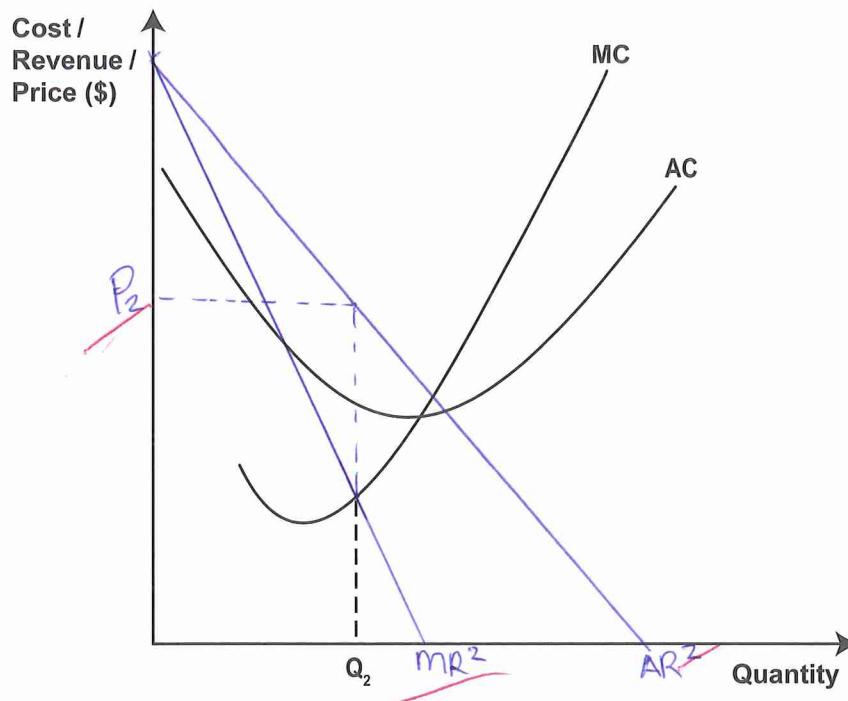
- (a) Complete Graph Four to show the impact of increased labour costs for a monopoly. Clearly label any changes.
- (b) Explain in detail, using **marginal analysis**, the change in the profit maximising price and quantity as a result of increased labour costs.

- (c) Compare and contrast the long-run price and output decisions of a monopolist earning a subnormal profit with a monopolist earning a supernormal profit.

In your answer:

- on **Graph Four** on the previous page, draw and label the average cost curve for the monopolist if the increase in labour costs results in a **subnormal** profit being earned. Label the curve **AC<sub>1</sub>**.
- explain in detail what the monopolist will do in the long run if **subnormal** profits continue to be earned and there are no other changes in costs or revenue
- on **Graph Five** below, draw and label the revenue curves for a profit maximising monopolist earning a **supernormal** profit at **Q<sub>2</sub>**. Label the curves **MR<sub>2</sub>** and **AR<sub>2</sub>**, and the price **P<sub>2</sub>**
- explain in detail why the monopolist producing at **Q<sub>2</sub>** can continue to earn **supernormal** profits in the long run
- explain in detail why the price and output decisions of the monopolist will remain unchanged in the long run if **supernormal** profits continue to be earned.

**Graph Five: A monopoly market**





Not Achieved exemplar for 91400 2015			Total score	05
Q	Grade score	Annotation		
1	N2	<p>Part (a)</p> <ul style="list-style-type: none"> <li>• Incorrect shading of supernormal profit and missing label</li> <li>• Long run supply curve and long run quantity omitted</li> </ul> <p>Part (b)</p> <ul style="list-style-type: none"> <li>• No use of marginal analysis in part (b) negating this whole part so the maximum possible was N2</li> </ul>		
2	N2	<p>Part (a)</p> <ul style="list-style-type: none"> <li>• Correct graphing of profit maximising price and quantity</li> </ul> <p>Part (b)</p> <ul style="list-style-type: none"> <li>• Correct graphing of average cost pricing price and quantity</li> <li>• Incomplete sentences with essential words missing</li> <li>• No understanding or application of allocative efficiency</li> </ul>		
3	N1	<p>Part (a)</p> <ul style="list-style-type: none"> <li>• No attempt to show impact of increased labour costs</li> </ul> <p>Part (b)</p> <ul style="list-style-type: none"> <li>• No attempt at explanations</li> </ul> <p>Part (c)</p> <ul style="list-style-type: none"> <li>• Correct plotting of MR and AR with approximate correct placement</li> <li>• Correct identification of profit maximisation price</li> </ul>		