No part of the candidate evidence in this exemplar material may be presented in an external assessment for the purpose of gaining credits towards an NCEA qualification.

3

SUPERVISOR'S USE ONLY

91400

914000

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
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Level 3 Economics, 2016

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

2.00 p.m. Friday 25 November 2016
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 2–11 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.

Achievement

TOTAL 10

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QUESTION ONE: NATURAL MONOPOLY

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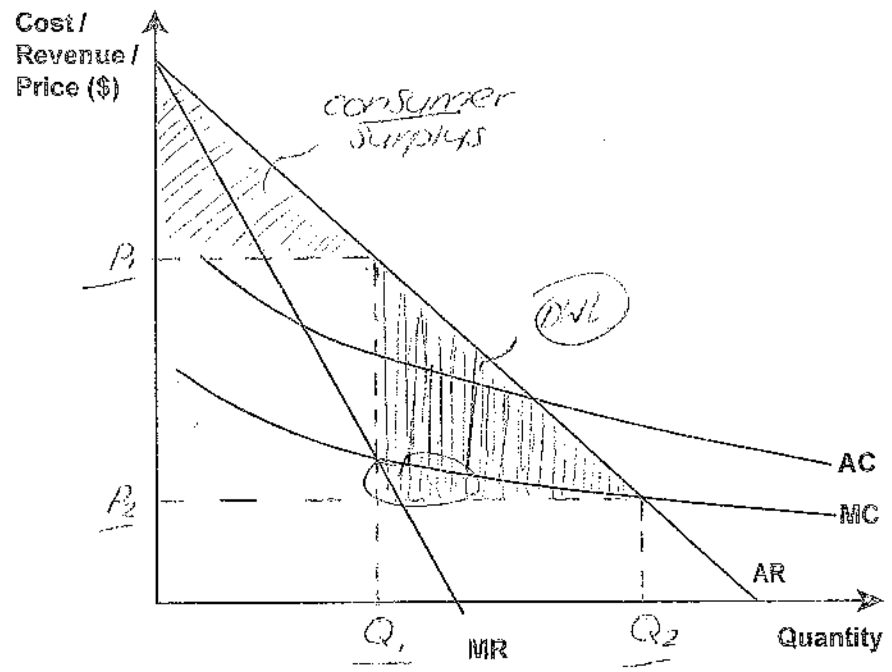
Since the mid 1990s, the New Zealand electricity industry has undergone significant reforms and deregulation. This has included splitting New Zealand's largest electricity generator into three competing generators, separating ownership of electricity lines and supply businesses, selling state-owned electricity generators, and introducing a system that enabled consumers to switch electricity retailers easily. These reforms were designed to make the electricity retail market much more competitive, giving consumers more choice and lower prices.

Source (adapted): http://www.mbie.govt.nz/info-services/sectors-industries/energy/electricity-market/electricity-industry/chronology-of-new-zealand-electricity-reform/chronology-of-nz-electricity-reform.pdf

Graph One: New Zealand retail electricity market



(a) (i) On Graph One, label the profit-maximising price (P_1) and the profit-maximising quantity (Q_1), assuming that the New Zealand retail electricity market was an example of a natural monopoly before the reforms.

(ii) Clearly shade and label the consumer surplus and deadweight loss that occurs at the profit-maximising equilibrium (P_1 and Q_1).

(iii) Label the price (P_2) and quantity (Q_2) that would result if the reforms were successful in achieving an allocatively efficient outcome in the New Zealand retail electricity market.

(b) Refer to Graph One to compare and contrast the efficiency of the two equilibriums.

In your answer, fully explain :

- how electricity consumers would be affected by the electricity reforms if the reforms achieved an allocatively efficient outcome
- why P_2 and Q_2 would result in an allocatively efficient outcome in the New Zealand retail electricity market, in contrast to the profit-maximising equilibrium (P_1 and Q_1)
- what additional intervention could be needed by the Government at P_2 and Q_2 in the electricity market if costs for electricity retailers did not decline.

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Electricity consumers would be positively affected if the ~~electricity~~ reforms achieved an allocatively efficient outcome. This is because consumers would have to pay the much lower price of P2 rather than P1.

P2 and Q2 would result in an allocatively efficient outcome in the ~~for~~ NZ retail electricity market compared to the profit maximising equilibrium ~~pem~~ (P1 & Q1) because P2 & Q2 is where demand equals supply, meaning the market is in equilibrium *

An additional intervention which could be needed by the government at P2 & Q2 is a subsidy as the retail electricity market at P2 & Q2 is making a subnormal profit which is not viable.

*Whereas at P1 & Q1 there is a large dead weight loss.

A4

QUESTION TWO: PERFECT COMPETITION

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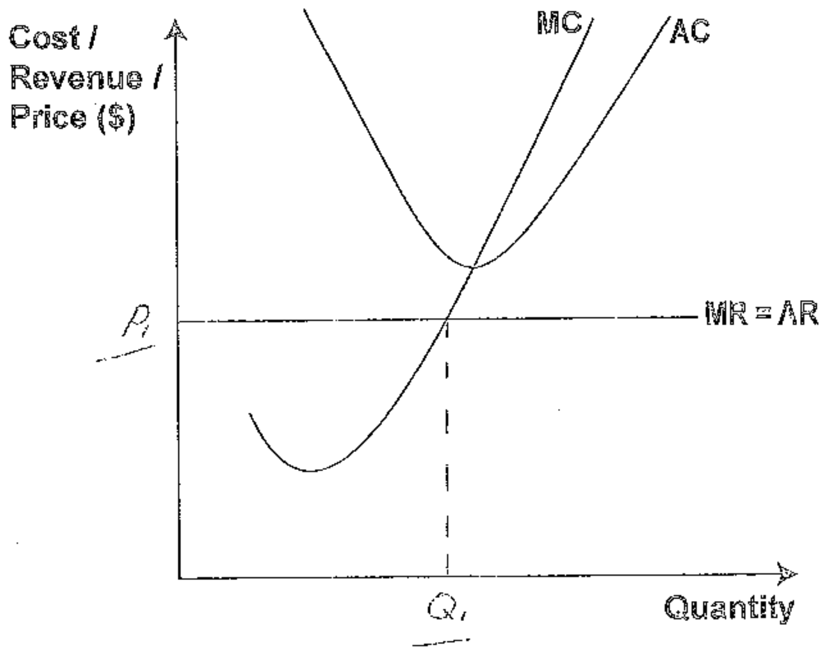
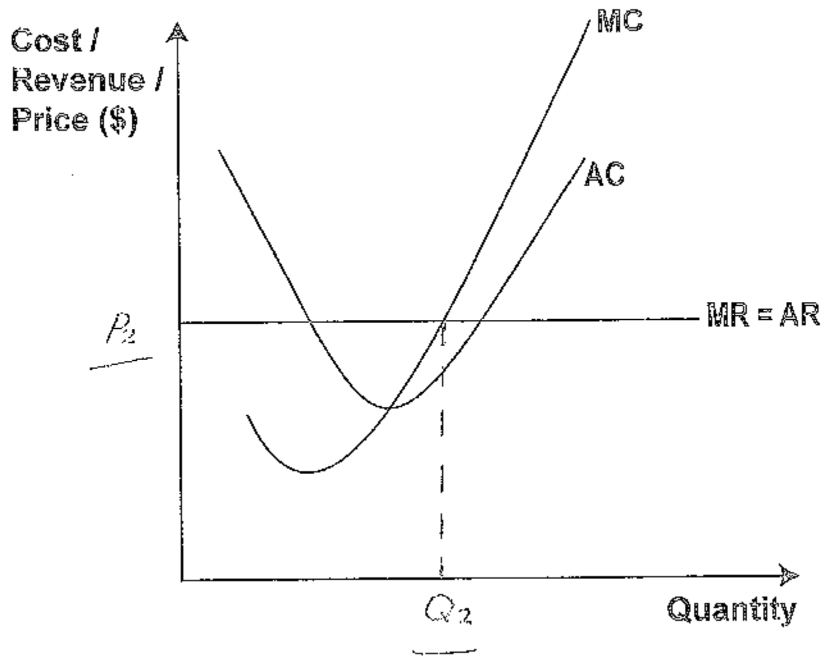
Graph Two: An individual perfectly competitive firm earning a subnormal profit in the short run



(a) (i) On Graph Two above, label the loss-minimising price (P_1) and the loss-minimising quantity (Q_1).

(ii) Clearly shade and label the subnormal profit earned by the firm in Graph Two.

Graph Three: An individual perfectly competitive firm earning a supernormal profit in the short run



(b) (i) On Graph Three above, label the profit-maximising price (P_2) and the profit-maximising quantity (Q_2).

(ii) Clearly shade and label the supernormal profit earned by the firm in Graph Three.

(c) Use marginal analysis to compare and contrast the long run situations of the firm earning subnormal profits with the firm earning supernormal profits, assuming that both firms stay in the industry.

In your answer:

- use Graphs Two and Three to show changes in the long run to profit, price, and output
- refer to the changes in your explanation.

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A perfectly competitive firm earning a subnormal profit in the short run will mean that MC>MR *

Because it is a perfectly competitive firm and there are other low/no barriers to entry or exit, firms will start to exit the market due to making a subnormal profit.

*Therefore the firm will need to decrease output to minimise marginal losses, to get back to where MC=MR. This will then mean the market returns to where normal profits are made at ~~[illegible]~~ AC=AR.

A perfectly competitive firm earning a supernormal in the short run will mean that MR>MC. This firm will need to increase their output to maximise profits until MC=MR. Becouse it is a perfect competitor other firms will enter the market due to lower barriers to take advantage of the supernormal profits. This will continue until the market

More answer space is available on the next page.

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returns to AR=AC and normal profits are made.

N2

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QUESTION THREE: MONOPOLY

The average real income per person in New Zealand increased from $43 313 to $48 472 between 2010 and 2015. This indicates an increase in purchasing power for New Zealand consumers during this time period.

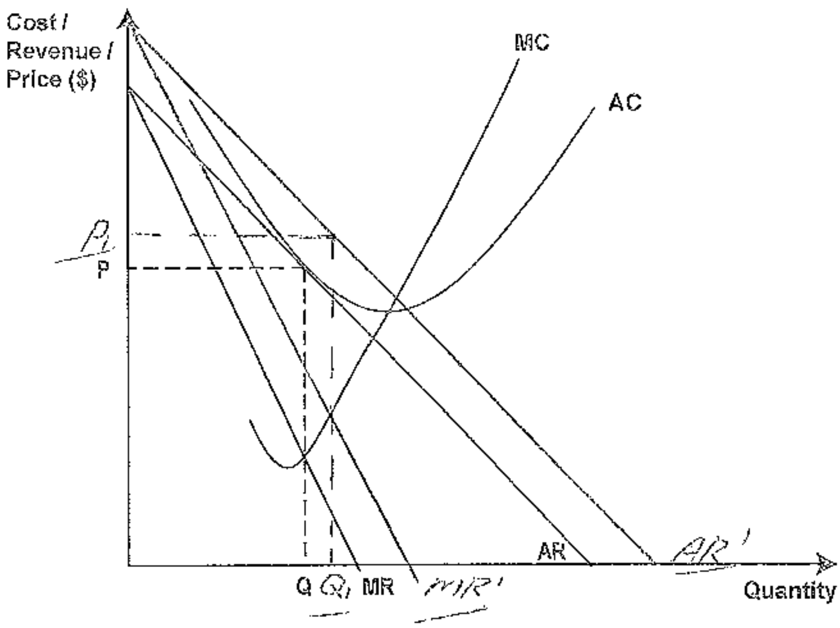
Source (adapted): http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-social-indicators/Home/Standard%20of%20living/disp-income-pp.aspx

For the same time period, two-year fixed mortgage rates decreased from 7.2% to 5.3%.

Source (adapted): http://www.rbnz.govt.nz/statistics/key_graphs/mortgage_rates/

These two economic events could have resulted in an increase in market demand for some firms and a reduction in fixed costs for firms that had fixed mortgages on their premises.

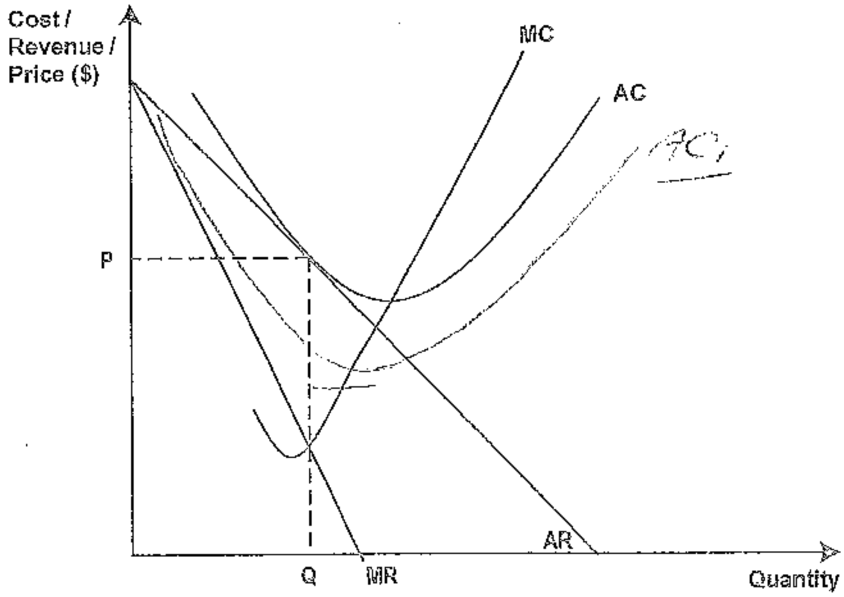
Graph Four: A monopolist earning a normal profit



(a) Complete Graph Four above to show the impact of an increase in market demand on a monopolist earning a normal profit. Clearly label the changes (if any) to the profit-maximising price and the profit-maximising quantity.

(b) Complete Graph Five on page 9 to show the impact of a reduction in fixed costs on a monopolist earning a normal profit. Clearly label the changes (if any) to the profit-maximising price and the profit-maximising quantity.

Graph Five: A monopolist earning a normal profit



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(c) Use marginal analysis, and Graphs Four and Five, to compare and contrast the impact on the profit, price, and output decisions of a monopolist, of an increase in market demand with a reduction in fixed costs.

In your answer, include:

- the impact on a monopolist's profit of an increase in market demand
- the impact on a monopolist's profit of a reduction in fixed costs
- whether an increase in market demand or a reduction in fixed costs would have a greater impact on the profit-maximising price and profit-maximising quantity for a monopolist.

An increase in market demand will mean that the monopolist now makes a supernormal profit at P_1 from a normal profit a P. This is because at Q MR'>MC meaning they should increase output to Q_1 from Q to maximise profits, MC=MR' at P_1 & Q_1.
A reduction in fixed cost will mean the monopolist is now making a supernormal profit as

More answer space is available on the next page.

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AR > AC

An increase in market demand would have a greater impact on the profit maximising price & ~~profit~~ quantity as an increase in market demand cause the profit maximing point to increase. Whereas a decrease in variable costs do not ~~shift~~ shift the profit maximising point.

A4

Achievement exemplar 2016

Subject:	**Economics**	**Standard:**	**91400**	**Total score:**	**10**

Q	**Grade score**	**Annotation**
1	A4	Shades consumer surplus accurately but incorrectly shades below MC for deadweight loss. Labels profit-maximising point and the allocatively efficient point accurately. Explains that consumers are positively affected by a lower price but omits the change in quantity and consumer surplus. Explains that demand equals supply at the allocatively efficient outcome but omits the removal of deadweight loss, and the maximised area of net welfare. Explains the firm needs a subsidy as a subnormal profit is not viable but omits the detail of what that is or why it is unsustainable. That is, AC>AR and the firm will leave in the long run. No detailed explanations are evident, so A4 is awarded.
2	N2	Loss-minimising and profit-maximising points are labeled accurately. No shading of subnormal or supernormal profit is evident. Incorrectly identifies subnormal profit as MC>MR, and supernormal profit as MR>MC, so no credit is awarded for explanation of normal profit. Incorrectly explains that the firm will decrease output on Graph Two, and increase output on Graph Three. No explanation of changes in price is included. No explanations are complete, so N2 is awarded.
3	A4	Labels changes on both graphs accurately, although the minimum of AC_1 on Graph Five is just barely within the margin of error at the intersection of MC. Confuses MC=MR as the profit-maximising point and normal profit in the same paragraph. However, correctly explains that output will increase to the new profit-maximising point at $MC=MR_1$. Explains the impact on profit of a change in fixed costs, making $AR>AC_1$, but omits the detail of the shift in AC. Incorrectly mentions that variable costs do not shift the profit-maximising point, instead of fixed costs. No detailed explanations are included, so A4 is awarded.