

**Assessment Schedule – 2013**

**Economics: Demonstrate understanding of the efficiency of market equilibrium (91399)  
Evidence Statement**

**Note for markers:** For each question, the answer should be read as a whole before the grade is allocated.

Question	Evidence
<p><b>ONE</b> (a) (i) &amp; (b)</p>	<p style="text-align: center;"><b>Graph One – The New Zealand shoe market</b></p>
<p>(ii)</p>	<p>As a result of the tariff being removed it is now cheaper to import shoes into New Zealand from China. Price drops from <math>P_w</math> to <math>P_{new}</math>. This means that the world supply falls from 'S with tariff' to 'S with tariff removal'.</p> <p>New Zealand production of shoes falls (from <math>Q_0</math> to <math>Q_3</math>), due to the lower price making it less profitable to produce shoes.</p> <p>New Zealand consumption rises from <math>Q_1</math> to <math>Q_2</math> due to the lower price. At a lower price with more being consumed domestically but less domestic output, imports increase from <math>Q_1 - Q_0</math> to <math>Q_2 - Q_3</math>, or <math>M_{new}</math>.</p>
<p>(b)</p>	<p>Due to the lower price and more shoes being consumed, consumer surplus increases by the area between <math>P_w</math> to <math>P_{new}</math> across to <math>D_{NZ}</math>.</p> <p>Due to the lower price and less being produced in New Zealand, the New Zealand producer surplus decreases by the area between <math>P_w</math> to <math>P_{new}</math> across to <math>S_{NZ}</math>.</p> <p>Because there is a removal of the tariff, there is a total loss of tariff revenue for the government shown as the rectangle between S with tariff and S with tariff removal, and <math>Q_0</math> and <math>Q_1</math>.</p> <p>There is an increase in allocative efficiency, as there is a gain in total surpluses (or idea). Although the PS has decreased, the CS has increased to include the loss in PS, loss of tariff revenue, and deadweight loss – which existed before tariff removal. The inclusion of the DWL is the net welfare gain to society, as a result of the tariff removal.</p>

N1	N2	A3	A4	M5	M6	E7	E8
<p>ONE of:</p> <ul style="list-style-type: none"> <li>identifying decrease in supply on the graph</li> <li>fall in price stated or shown</li> <li>less produced in NZ stated or shown</li> <li>more consumed stated or shown</li> <li>more imports stated or shown</li> <li>defining allocative efficiency.</li> <li>Other acceptable correct information eg govt revenue lost</li> </ul>	<p>Correctly identifying decrease in supply. <i>AND</i> ONE of:</p> <ul style="list-style-type: none"> <li>fall in price stated or shown</li> <li>less produced in NZ stated or shown</li> <li>more consumed stated or shown</li> <li>more imports stated or shown</li> <li>defining allocative efficiency.</li> <li>Other acceptable correct information eg govt revenue lost</li> </ul>	<p>Understanding involves:</p> <ul style="list-style-type: none"> <li>correctly identifying a decrease in supply</li> <li>explaining the fall in price</li> <li>explaining that less is produced in NZ, more consumed and more imported</li> <li>limited reference to the graph</li> <li>explaining gain in allocative efficiency, by reference to change in 2 of consumer surplus, producer surplus, government revenue.</li> </ul> <p>Some parts may be incomplete.</p>	<p>Understanding involves:</p> <ul style="list-style-type: none"> <li>correctly identifying a decrease in supply</li> <li>explaining the fall in price</li> <li>explaining that less is produced in NZ, more consumed and more imported</li> <li>limited reference to the graph</li> <li>explaining gain in allocative efficiency, by reference to change in 2 of consumer surplus, producer surplus, government revenue.</li> </ul>	<p>In-depth understanding involves:</p> <ul style="list-style-type: none"> <li>correctly identifying and explaining in detail the impact of tariff removal on the New Zealand shoe market. The explanation links the fall in price, decrease in supply, more consumed, and more imported</li> <li>explaining in detail gain in allocative efficiency as total surpluses are increased</li> <li>referring to the graph to support answers.</li> </ul> <p>Some parts may lack detail or are incomplete.</p>	<p>In-depth understanding involves:</p> <ul style="list-style-type: none"> <li>correctly identifying and explaining in detail the impact of tariff removal on the New Zealand shoe market. The explanation links the fall in price, decrease in supply, more consumed, and more imported</li> <li>explaining in detail gain in allocative efficiency as total surpluses are increased</li> <li>referring to the graph to support answers.</li> </ul>	<p>Comprehensive understanding involves:</p> <ul style="list-style-type: none"> <li>comparing and contrasting the impact of the tariff removal on consumer surplus, producer surplus, government revenue and allocative efficiency</li> <li>integrating the graph into the detailed explanations.</li> </ul> <p>Some parts may lack detail or are incomplete.</p>	<p>Comprehensive understanding involves:</p> <ul style="list-style-type: none"> <li>comparing and contrasting the impact of the tariff removal on consumer surplus, producer surplus, government revenue and allocative efficiency</li> <li>integrating the graph into the detailed explanations.</li> </ul>

**N0** = No response; no relevant evidence.

Question	Evidence											
<p><b>TWO</b> (a)</p>		<p style="text-align: center;"><b>Labels from Graph Two</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">The new equilibrium price and quantity</td> <td style="width: 50%; text-align: center; padding: 5px;"><b>P<sub>2</sub> and Q<sub>2</sub></b></td> </tr> <tr> <td style="padding: 5px;">The change in consumer surplus</td> <td style="text-align: center; padding: 5px;"><b>P<sub>2</sub>, P<sub>1</sub>, e, a</b></td> </tr> <tr> <td style="padding: 5px;">The change in producer surplus</td> <td style="text-align: center; padding: 5px;"><b>P<sub>1</sub>, P<sub>3</sub>, b, e</b></td> </tr> <tr> <td style="padding: 5px;">The tax revenue for government</td> <td style="text-align: center; padding: 5px;"><b>P<sub>2</sub>, P<sub>3</sub>, b, a</b></td> </tr> <tr> <td style="padding: 5px;">The deadweight loss</td> <td style="text-align: center; padding: 5px;"><b>a, b, e</b></td> </tr> </table>	The new equilibrium price and quantity	<b>P<sub>2</sub> and Q<sub>2</sub></b>	The change in consumer surplus	<b>P<sub>2</sub>, P<sub>1</sub>, e, a</b>	The change in producer surplus	<b>P<sub>1</sub>, P<sub>3</sub>, b, e</b>	The tax revenue for government	<b>P<sub>2</sub>, P<sub>3</sub>, b, a</b>	The deadweight loss	<b>a, b, e</b>
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<p>(b)</p>	<p>As a result of the tax, the producers in each market now require a higher price to be willing to supply each unit, so the supply adjusts to S+tax in both Graph Two and Graph Three.</p> <p>At the current price of P<sub>1</sub> (in Graph Two) and P<sub>4</sub> (in Graph Three), an excess demand for the products now exists, so consumers bid the price up in order to secure products that they want.</p> <p>As the price is bid up:</p> <ul style="list-style-type: none"> <li>• the quantity demanded falls</li> <li>• the quantity producers are willing to supply increases, until equilibrium is re-established at price P<sub>2</sub> in Graph Two, with quantity Q<sub>2</sub> and price P<sub>5</sub> in Graph Three, with quantity Q<sub>5</sub>.</li> </ul> <p><b>In Graph Two, where demand is inelastic:</b></p> <p>Because the tax now increases the price and decreases the quantity traded, the consumer surplus falls by P<sub>2</sub>, P<sub>1</sub>, e, a.</p> <p>Because the tax decreases the price received by the producer to P<sub>3</sub> (consumers' price -\$1 tax per unit), and decreases the quantity traded, the producer surplus falls by P<sub>1</sub>, P<sub>3</sub>, b, e. The government receives new tax revenue (P<sub>2</sub>, P<sub>3</sub>, b, a).</p> <p>Allocative efficiency occurs when the sum of the total surpluses are maximised. Since the loss in consumer surplus + producer surplus is more than the gain in tax revenue that the government gained, allocative efficiency is lost (a deadweight loss exists of a, b, e in Graph Two).</p> <p><b>In Graph Three, where demand is elastic:</b></p> <p>Because the tax now increases the price and decreases the quantity traded, the consumer surplus falls by P<sub>5</sub>, P<sub>4</sub>, e, c.</p> <p>Because the tax decreases the price received by the producer to P<sub>6</sub> (consumers' price -\$1 tax per unit) and decreases the quantity traded, the producer surplus falls by P<sub>4</sub>, P<sub>6</sub>, d, e.</p> <p>The government receives new tax revenue of P<sub>5</sub>, P<sub>6</sub>, d, c in Graph Three.</p> <p>Allocative efficiency occurs when the sum of the total surpluses are maximised., Since the loss in consumer surplus + producer surplus is more than the gain in tax revenue that the government gained, allocative efficiency is lost (a deadweight loss exists of c, d, e in Graph Three).</p> <p>Since Graph Two has price-inelastic demand, and Graph Three has price-elastic demand, more of the tax can be passed on to the consumer in Graph Two – as consumers will continue to buy (relatively) the same quantity at the higher price. Consumers then lose more surplus than consumers in Graph Three. This is shown by the area of lost Consumer Surplus in Graph Two being larger than in Graph Three.</p> <p>Because more of the tax is passed on to the consumer in Graph Two than in Graph Three, the loss of surplus to the producers is greater in Graph Three than in Graph Two.</p> <p>The Government receives new tax revenue, in both Graph Two and Graph Three. Since Graph Two was price-inelastic, the change in price had a proportionately smaller impact on quantity – so the Government receives more tax revenue from the inelastic products.</p> <p>The deadweight loss is greater in Graph Three (c, d, e) as it is price-elastic, so the proportionately greater fall in quantity means that the combined CS+PS lost is greater than in Graph Two (a, b, e), while the revenue gained by the government is smaller. Therefore a tax on a price-elastic demand is more allocatively inefficient than a tax on a price-inelastic demand.</p>											

N1	N2	A3	A4	M5	M6	E7	E8
<p>Some requirements of N2 are correct.</p>	<p>For EITHER graph TWO of:</p> <ul style="list-style-type: none"> <li>• TWO out of FIVE correct in Table One</li> <li>• identifying excess demand</li> <li>• allocative efficiency or DWL defined.</li> </ul>	<p>Understanding involves TWO of:</p> <ul style="list-style-type: none"> <li>• THREE out of FIVE correct in Table One</li> <li>• explaining market forces involved in the shift to the new equilibrium</li> <li>• explaining efficiency in the market by describing change in consumer surplus, producer surplus, government revenue, loss of allocative efficiency, deadweight loss.</li> </ul> <p>Some parts may be incomplete.</p>	<p>Understanding involves TWO of:</p> <ul style="list-style-type: none"> <li>• FOUR out of FIVE correct in Table One</li> <li>• explaining market forces involved in the shift to the new equilibrium</li> <li>• explaining efficiency in the market by describing change in consumer surplus, producer surplus, government revenue, loss of allocative efficiency, deadweight loss.</li> </ul>	<p>In-depth understanding involves, for EITHER graph:</p> <ul style="list-style-type: none"> <li>• FOUR out of FIVE correct in Table One</li> <li>• explaining in detail, market forces to shift to new equilibrium using the graph to support the explanation</li> <li>• explaining in detail, loss of allocative efficiency, in terms of total surpluses decreasing and deadweight loss.</li> </ul> <p>Reference made to graph. Some parts may lack detail or are incomplete.</p>	<p>In-depth understanding involves, for EITHER graph:</p> <ul style="list-style-type: none"> <li>• FOUR out of FIVE correct in Table One</li> <li>• explaining in detail, market forces to shift to new equilibrium using the graph to support the explanation</li> <li>• explaining in detail, loss of allocative efficiency, in terms of total surpluses decreasing and deadweight loss.</li> </ul> <p>Reference made to graph.</p>	<p>Comprehensive understanding involves, for BOTH graphs:</p> <ul style="list-style-type: none"> <li>• integrating the graph(s) into detailed explanations of the changes in market equilibrium</li> <li>• comparing and contrasting the impact on allocative efficiency, consumer surplus, producer surplus, government revenue, and deadweight loss by referring to differing elasticities.</li> </ul> <p>Some parts may lack detail or are incomplete.</p>	<p>Comprehensive understanding involves, for BOTH graphs:</p> <ul style="list-style-type: none"> <li>• integrating the graph(s) into detailed explanations of the changes in market equilibrium</li> <li>• comparing and contrasting the impact on allocative efficiency, consumer surplus, producer surplus, government revenue, and deadweight loss by referring to differing elasticities.</li> </ul>

**N0** = No response; no relevant evidence.

Question	Evidence
<p><b>THREE</b> (a)</p>	<p>The increase in demand creates a shortage at the current rent of <math>P_1</math>. Those wanting to secure rental accommodation bid the rent up. As the rent rises, the quantity supplied increases and the quantity demanded falls, until equilibrium is re-established at <math>P_2</math> on Graph Four with <math>Q_2</math> traded.</p>
<p>(b)</p>	<p>As a result of the maximum rent being set at <math>P_1</math> in Graph Four, a shortage will now exist of <math>Q_3 - Q_1</math>. Due to the price being fixed at <math>P_1</math>, the market forces cannot increase the price, so the shortage of housing will continue to exist. This means some families will be without homes, or may lead to multiple families per home.</p> <p>If the rent had risen, then the consumer surplus would have been <math>b, c, P_2</math>, and the producer surplus <math>a, c, P_2</math> – making an area of <math>b, c, a</math> as the total surpluses.</p> <p>Due to the rent control, the consumer surplus will now be <math>b, d, e, P_1</math>. This is an increase in consumer surplus, as those with housing will now pay less rent (<math>P_1</math> instead of <math>P_2</math>). This outweighs the decrease in properties rented (<math>Q_2 - Q_1</math>). The producer surplus will fall, as fewer properties are rented at a lower rent. So producer surplus is now <math>P_1, e, a</math>. The total surplus is now <math>b, d, e, a</math>.</p> <p>The rent control causes a loss in total surpluses from <math>b, c, a</math>, down to <math>b, d, e, a</math>. The loss in consumer and producer surplus is not transferred to any other participant in the market, so is a deadweight loss – area <math>d, c, e</math> on the graph.</p> <p>The rent control makes housing for those consumers who get properties more affordable than the higher rents at <math>P_2</math>. However, it also leaves the market at disequilibrium, with an excess demand of <math>Q_3 - Q_1</math>, so some people miss out on housing. This is not the goal of the government when they interfered in the rental market.</p>

N1	N2	A3	A4	M5	M6	E7	E8
Some requirements of N2 are correct.	<ul style="list-style-type: none"> <li>market forces shifting equilibrium described</li> <li><math>Q_1</math> identified as the quantity supplied after rent control</li> <li>allocative efficiency or DWL defined OR DWL identified.</li> <li>Consumer surplus identified</li> <li>Producer surplus identified</li> </ul>	<p>Understanding involves limited reference to the Graph and:</p> <ul style="list-style-type: none"> <li>explaining the change in equilibrium</li> <li>explaining the impact of rent control on price OR quantity</li> <li>explaining that rent control creates a shortage</li> <li>describing the change in consumer surplus in Graph Four</li> <li>describing the change in producer surplus in Graph Four</li> <li>describing the loss of allocative efficiency described or deadweight loss in Graph Four.</li> </ul> <p>Some parts may be incomplete.</p>	<p>Understanding involves limited reference to the Graph and:</p> <ul style="list-style-type: none"> <li>explaining the change in equilibrium</li> <li>explaining the impact of rent control on price OR quantity</li> <li>explaining that rent control creates a shortage</li> <li>describing the change in consumer surplus in Graph Four</li> <li>describing the change in producer surplus in Graph Four</li> <li>describing the loss of allocative efficiency described or deadweight loss in Graph Four.</li> </ul>	<p>In-depth understanding involves:</p> <ul style="list-style-type: none"> <li>explaining in detail the impact of the policy on market equilibrium</li> <li>explaining in detail loss of allocative efficiency as total surpluses are decreased</li> <li>identifying deadweight loss</li> <li>govt's goal not met (shortage ie some still miss out)</li> <li>referring to the graph to support answers.</li> </ul> <p>Some parts may lack detail or are incomplete.</p>	<p>In-depth understanding involves:</p> <ul style="list-style-type: none"> <li>explaining in detail the impact of the policy on market equilibrium</li> <li>explaining in detail loss of allocative efficiency as total surpluses are decreased</li> <li>identifying deadweight loss</li> <li>govt's goal not met (shortage ie some still miss out)</li> <li>referring to the graph to support answers.</li> </ul>	<p>Comprehensive understanding involves:</p> <ul style="list-style-type: none"> <li>integrating the graph into explaining the impact on market equilibrium</li> <li>comparing and contrasting the impact on allocative efficiency by considering the size of the deadweight loss and which gets most people into affordable rental accommodation.</li> </ul> <p>Some parts may lack detail or are incomplete.</p>	<p>Comprehensive understanding involves:</p> <ul style="list-style-type: none"> <li>integrating the graph into explaining the impact on market equilibrium</li> <li>comparing and contrasting the impact on allocative efficiency by considering the size of the deadweight loss and which gets most people into affordable rental accommodation.</li> </ul>

N0 = No response; no relevant evidence.

### Judgement Statement

	Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
Score range	0 – 6	7 – 13	14 – 18	19 – 24