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91399



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Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

## Level 3 Economics 2025

### 91399 Demonstrate understanding of the efficiency of market equilibrium

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of the efficiency of market equilibrium.	Demonstrate in-depth understanding of the efficiency of market equilibrium.	Demonstrate comprehensive understanding of the efficiency of market equilibrium.

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 2–14 in the correct order and that none of these pages is blank.

Do not write in the margins (//////). This area will be cut off when the booklet is marked.

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

**Excellence**

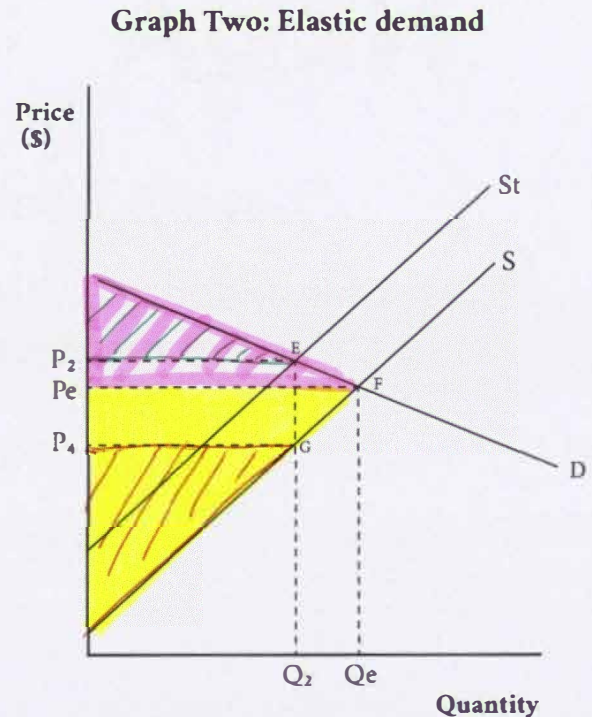
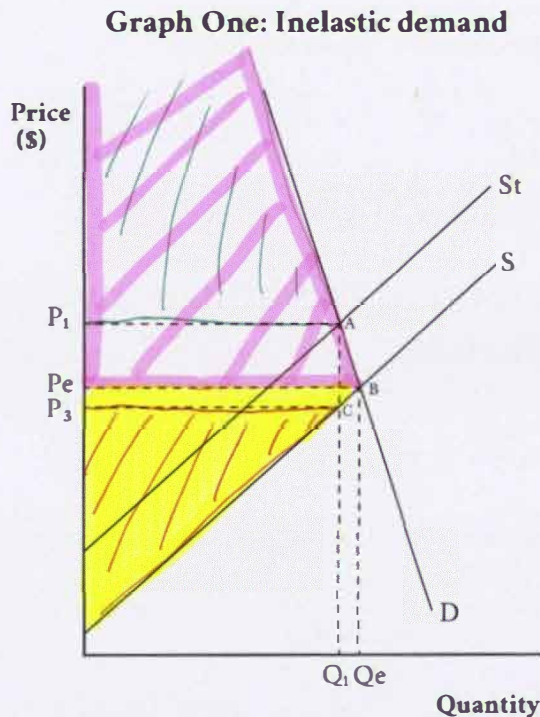
**TOTAL 22**

**QUESTION ONE: Indirect tax and elasticity of demand**

The purpose of an indirect tax, such as an excise duty, is to discourage the consumption of goods that may have negative health or social impacts, and to generate revenue for the Government.

Graph One shows the effect of an indirect tax placed on a good with inelastic demand.

Graph Two shows the effect of an indirect tax placed on a good with elastic demand.



- (a) Complete Table One below by using the letters or labels in Graph One and Graph Two to identify the changes in surpluses, Government tax revenue, and deadweight loss.

**Table One**

	<b>Graph One (inelastic)</b>	<b>Graph Two (elastic)</b>
<b>Decrease in consumer surplus</b>	$P_1 A B P_e$	$P_2 E F P_e$
<b>Decrease in producer surplus</b>	$P_e B C P_3$	$P_e F G P_4$
<b>Tax revenue</b>	$P_1 A C P_3$	$P_2 E G P_4$
<b>Deadweight loss</b>	$A B C$	$E F G$

Refer to Graphs One and Two and Table One in your answer to part (b) below.

- (b) (i) Explain why the impact on consumer surplus is greater when demand is inelastic compared to when it is elastic. In your answer, include the definition of inelastic demand and a reason for demand being inelastic.

Inelastic demand is when a change in price results in a proportionally smaller change in the quantity demanded. Demand can be inelastic when the good is a necessity. Elastic demand is when a change in price results in a proportionally larger change in the quantity demanded. Demand can be elastic when the good has many substitutes. When an <sup>indirect</sup> tax is imposed, this increases a producer's cost of production, causing a decrease in supply from  $S$  to  $S^t$ , and causes an increase in price from  $P_e$  to  $P_i$  for inelastic demand and  $P_e$  to  $P_2$  for elastic demand. An indirect tax aims to discourage consumption and decrease the quantity demanded. In order to significantly decrease the quantity demanded of an inelastic good, the price must increase by a significant amount, whereas to decrease the quantity demanded for an elastic good, the price does not need to drop by much. Therefore the impact on consumer surplus is greater when demand is inelastic as they face a significant increase in price from  $P_e$  to  $P_i$ , causing a decrease in quantity demanded from  $Q_e$  to  $Q_i$  and a significant reduction in consumer surplus by  $P_i A B P_e$  as the difference between the price paid and the price consumers are willing to pay has significantly decreased and they are now consuming fewer units from which to gain a surplus. The loss of consumer surplus of  $P_2 E F P_e$  is smaller for elastic demand as the difference between the price paid and the price consumers are willing to pay has not decreased significantly ( $P_e - P_2$ ), and they also consume fewer units from which to gain a surplus ( $Q_e - Q_2$ ).

Question continues on the next page ►

- (ii) Explain whether the Government would place the indirect tax on an elastic or inelastic good, if its objective was to:
- generate revenue
  - discourage consumption.

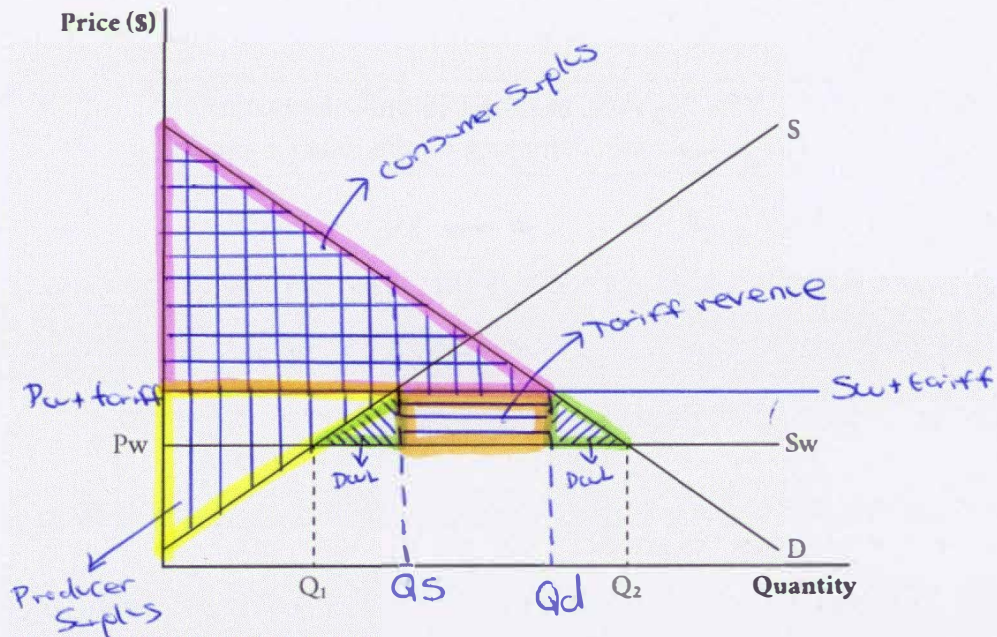
The government would place the indirect tax on an elastic good if its objective was to generate revenue and discourage consumption. Firstly an indirect tax on an elastic good increases the price consumers pay from  $P_e$  to  $P_2$ . This increase in price causes a proportionally larger decrease in the quantity demanded from  $Q_e$  to  $Q_2$  (as it is more affordable). This causes a significant drop in consumption, whereas an indirect tax on an inelastic good causes an increase in price from  $P_e$  to  $P_1$ , but a proportionally smaller decrease in quantity demanded from  $Q_e$  to  $Q_1$ , therefore consumption is not discouraged as much. An indirect tax on an inelastic good generates a government revenue of  $P_1 A C P_3$  and an indirect tax on an elastic good generates a government revenue of  $P_2 E G P_4$ . The government revenue may be slightly smaller for an elastic good due to the significant drop in consumption ( $Q_e$  to  $Q_2$ ), however an indirect tax on an elastic good best meets the objectives of the government. two government objectives

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## QUESTION TWO: Tariffs

Although New Zealand generally aims for a free and open trade environment with relatively low tariffs, some goods, like textiles and clothing, continue to be subject to tariffs to protect domestic industries.

**Graph Three: The New Zealand market for textiles and clothing**




- (a) On Graph Three above, show the effect of imposing a tariff on the market for textiles and clothing by:
- indicating with dotted lines the new quantity demanded (label  $Q_d$ ) and the quantity supplied (label  $Q_s$ )
  - shading the:
    - new consumer surplus (grid shading)
    - new producer surplus (vertical line shading)
    - tariff revenue (horizontal line shading)
    - deadweight loss (diagonal line shading) (Dwl)
  - labelling all changes.

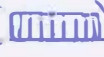
Refer to Graph Three, the resource material, and the changes you made in (a) on page 6 in your answer to part (b) below.

(b) Explain the impact of the tariff on the market for textiles and clothing on the following:

Consumers


The implementation of a tariff on the market for textiles and clothing increases the price <sup>domestic</sup> consumers pay from  $P_w$  to  $P_w + \text{tariff}$ . This decreases affordability and results in the decrease in the quantity demanded from  $Q_2$  to  $Q_d$ . As a result, consumer surplus decreases to the pink outlined area (  ) as the difference between the price paid and the price consumers are willing to pay decreases and consumers are now consuming fewer units from which to gain a surplus.

Producers, including any difference in impact on New Zealand producers of textiles and clothing and importers of textiles and clothing


The implementation of a tariff <sup>protecting domestic industries</sup> on the market for textiles and clothing increases the price New Zealand producers receive from  $P_w$  to  $P_w + \text{tariff}$ . This increases profitability and results in the increase of the quantity supplied from  $Q_1$  to  $Q_s$ . As a result the producer surplus for New Zealand producers increases to the yellow outlined area (  ) as the difference between the price received and the price producers are willing to receive increases and producers are now supplying more units from which to gain a surplus. Although, New Zealand producers benefit from the tariff, importers of textiles and clothing will be negatively affected as they must now pay a higher price from  $P_w$  to  $P_w + \text{tariff}$ , which means the level of imports will decrease from  $Q_2 - Q_1$  to  $Q_d - Q_s$  as it is now less affordable.

Question continues on the next page ►

### The Government

The New Zealand Government will positively benefit from implementing the tariff to protect domestic industries as it results in the gain of a tariff revenue shaded orange (). This revenue is the value of the tariff ( $P_w - P_d$ ) multiplied by the volume of imports ( $Q_d - Q_s$ ). This revenue allows the government to increase spending in other areas of the economy such as education and health.

### Allocative efficiency

The implementation of the tariff on textiles and clothing results in a loss of allocative efficiency, represented by the deadweight loss areas shaded green ().

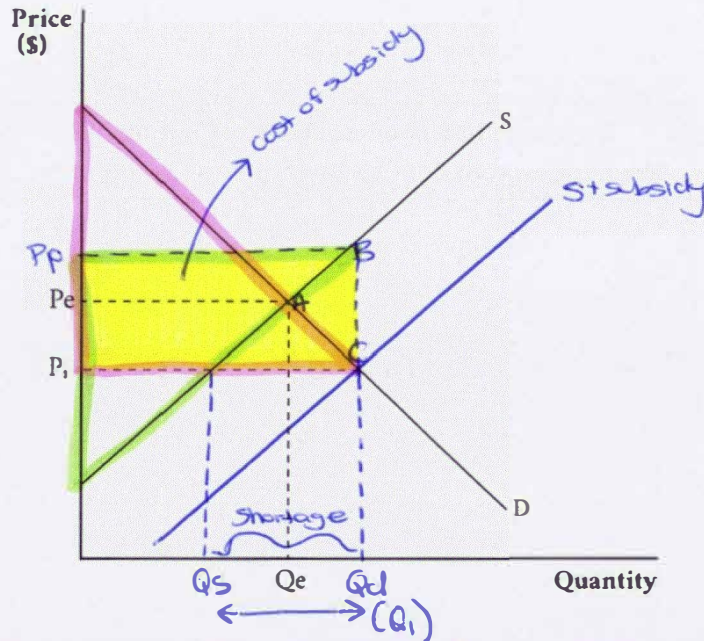
This is because the gain in producer surplus combined with the gain in tariff revenue <sup>for the government</sup> does not fully offset the loss in consumer surplus. This illustrates that total surpluses are no longer maximised and the loss of net social welfare is represented through the two deadweight loss areas. Therefore, the market is allocatively inefficient.

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### QUESTION THREE: Subsidy

A subsidy plays an important role in improving New Zealanders' access to affordable and effective medicines. Without a subsidy, the market for medicines is likely to face a shortage.

Graph Four: The market for medicines



- (a) (i) On Graph Four above, use dotted lines to show the resulting shortage of medicines that might occur at price  $P_1$ . Label the shortage and the corresponding  $Q_d$  and  $Q_s$ .
- (ii) At the current price,  $P_1$ , how would equilibrium be restored in the market for medicines? In your answer, refer to the relevant labels on Graph Four, the changes you made in part (a)(i) above, and the concept of market forces.

At the current price,  $P_1$ , the quantity demanded ( $Q_d$ ) is larger than the quantity supplied ( $Q_s$ ). This results in a shortage in the market for medicines to the value of  $Q_d - Q_s$  as  $Q_d > Q_s$ . Therefore, consumers will bid up the price of medicines in fear of missing out on the limited stock. As the price increases from  $P_1$ , the quantity demanded decreases from  $Q_d$  towards  $Q_e$  as it is now less affordable for consumers to purchase medicines. However, as the price increases from  $P_1$ , the quantity supplied increases from  $Q_s$  towards  $Q_e$  as it is now more profitable for producers to supply medicines. This process continues until supply is equal to demand ( $Q_s = Q_d$ ) and equilibrium is restored at  $P_e, Q_e$  where the shortage is eliminated.

Better health outcomes for New Zealanders now would mean less cost pressure on the health system in the long term. This is a good justification for the Government to continue funding the subsidy for medicines.

(iii) On Graph Four on page 10:

- add one new curve to show the effect of a subsidy that would remove the shortage from the market of medicines; label the curve
- shade and label the area that represents the total cost of subsidy to the Government
- show the price producers receive after the subsidy (label  $P_p$ )
- mark the area representing the deadweight loss with the letters A, B, and C.

Refer to Graph Four and the resource material in your answer to part (b) below.

(b) Explain the impact of a subsidy on the market for medicines on the following:

Consumers

The implementation of a subsidy on the market for medicines to ensure better health outcomes for New Zealanders would decrease the price consumers pay for medicines from  $P_e$  to  $P_i$ . This increased affordability increases consumption and the quantity demanded from  $Q_e$  to  $Q_1$  ( $Q_d$ ). As a result, consumer surplus increases to the pink outlined area as the difference between the price paid and the price consumers are willing to pay increases and they are now consuming more units from which to gain a surplus.

Producers

The implementation of a subsidy on the market for medicines decreases the producers cost of production, therefore resulting in an increase in supply at each and every price, <sup>as it is now more profitable</sup> seen through the shift of the supply curve to the right from  $S$  to  $S'$  subsidy. This increases the price producers receive from  $P_e$  to  $P_p$ . As a result, profitability increases, and the quantity supplied increases from  $Q_e$  to  $Q_1$ . As a result, producer surplus increases to the green outlined area as the difference between the price received and the price producers are willing to receive increases and they are now supplying more units from which to gain a surplus.

The Government, including how it justifies the continued funding of medicine subsidies despite funding pressures

The implementation of a subsidy on the market for medicines costs the government the yellow shaded area ~~the~~ which is the value of the subsidy  $(P_p - P_i)$  multiplied by the level of consumption  $(Q_1)$ . This means that the government may have to decrease spending and funding in other areas of the economy or resort to increasing debt levels. However, the government can justify the continued funding of medicine subsidies despite funding pressures. This is because it results in a decreased cost pressure on the health system in the long term and increases productivity as society is healthier. This therefore means that the government does not have to significantly increase funding

#### Allocative efficiency

The implementation of a subsidy on the market for medicines results in a loss of allocative efficiency, demonstrated through the deadweight loss ABC. This is because the gain in consumer and producer surplus does not fully offset the cost to the government of implementing the subsidy (yellow shaded area). Therefore total surpluses are not maximized and a net <sup>loss of</sup> social welfare occurs, which results in a deadweight loss area ABC, and a loss of allocative efficiency.

Extra space if required.  
Write the question number(s) if applicable.

QUESTION  
NUMBER

Q3b Government

for healthcare as New Zealand society has improved health rates from this funding of medicines. New Zealand would also gain money from improved productivity from the increased health rates. This therefore justifies the government's decision.



91399

## Excellence

**Subject:** Economics

**Standard:** 91399

**Total score:** 22

Q	Grade score	Marker commentary
One	E7	The candidate completed the table correctly. Their definition of inelastic demand was correct and identified reasons for a product to be inelastic. The change to consumer surplus on both graphs was identified with reference to the graph for the change in price, quantity, and overall decrease in consumer surplus. The candidate incorrectly interpreted the final question to identify a good that would achieve both goals but did give a detailed explanation of how an elastic good would best address discouraging consumption.
Two	E7	The candidate drew the graph correctly. They correctly identified the changes to consumer surplus and producer surplus with three graph references – price, quantity, and overall change – and integrated the definition into their answer. There was limited analysis of the effect on the importers. The candidate correctly identified the additional revenue to the government and what this could be spent on and included examples. Allocative efficiency was analysed well with the offset correctly identified as well as a graph reference.
Three	E8	The candidate drew the graph correctly including correct labels. They showed a clear understanding of the market forces, including applying it to the context. The changes to the consumer surplus and producer surplus were correctly identified, including three graph references to the price, quantity, and overall change. They have correctly integrated the definition in their explanation. The cost to the government of the subsidy was identified along with a graph reference. They have identified the opportunity cost and the long term effect. The loss of allocative efficiency was identified with a detailed explanation of why it is no longer allocatively efficient.