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NZQA | Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 3 Economics 2023

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 2–16 in the correct order and that none of these pages is blank.

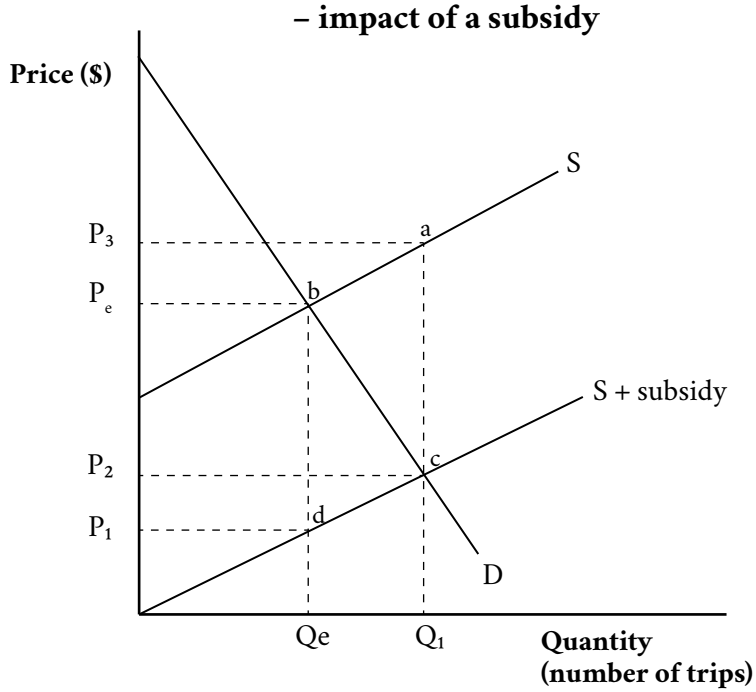
Do not write in any cross-hatched area (DO NOT WRITE IN THIS AREA DO NOT WRITE). This area will be cut off when the booklet is marked.

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

QUESTION ONE: Impact of a subsidy

Source: Green, K. (2022, December 15). *Ending half-price fares risks gains in changing transport behaviour - advocates*. Radio New Zealand. https://www.rnz.co.nz/news/national/480778/ending-half-price-fares-risks-gains-in-changing-transport-behaviour-advocates

Graph One: The market for public transport – impact of a subsidy



(a) Use the labels from Graph One to identify the:

- change in consumer surplus: _____
- change in producer surplus: _____
- total cost of subsidy: _____
- deadweight loss: _____

The effectiveness of the subsidy in encouraging more people to use public transport depends on the price elasticity of demand.

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

(b) (i) Compare and contrast how the subsidy impacts consumers and producers.
In your answer, explain the price elasticity of demand of public transport, and why it influences the extent of these impacts.

(ii) Explain how the subsidy impacts the Government, and its plan for emissions reduction.

(iii) Explain how the subsidy impacts allocative efficiency, and why this change in efficiency occurs.

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The assessment continues on the following page.

QUESTION TWO: Restricting the number of retailers, and an indirect tax

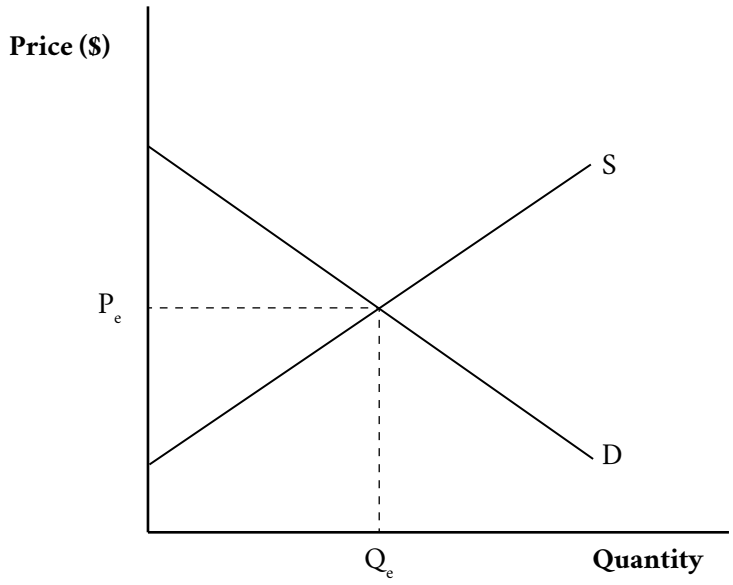
[redacted]

Source: Checkpoint. (2022, April 14). *New research reveals dangers of vapes, e-cigarettess*. Radio New Zealand. https://www.rnz.co.nz/national/programmes/checkpoint/audio/2018838310/new-research-reveals-dangers-of-vapes-e-cigarettes

To minimise the number of people taking up vaping, particularly young people, the Government could restrict the number of retailers selling vaping products.

Graph Two shows the market for vaping products at equilibrium, with equilibrium price (P_e) and equilibrium quantity (Q_e).

Graph Two: The market for vaping products – impact of restricting the number of retailers



(a) (i) Complete Graph Two above by:

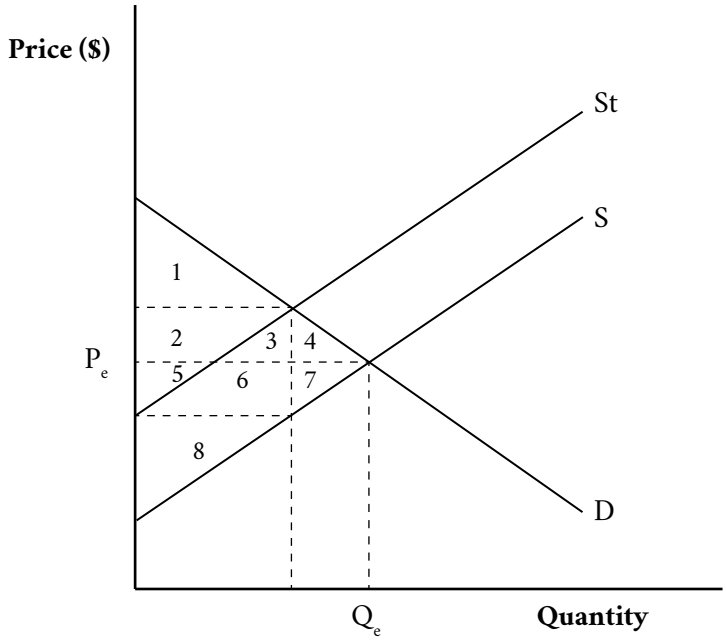
- adding and labelling a new curve showing the decrease in the number of retailers
- identifying and labelling the new equilibrium price (P_1) and quantity (Q_1)
- identifying and labelling the resulting shortage or surplus at the original price (P_e).

(ii) How would equilibrium be restored in the market for vaping products following a decrease in retailer numbers? Refer to the relevant labels from Graph Two and the concept of market forces in your detailed explanation.

Another possible intervention is for the Government to impose an indirect tax on vaping products.

Graph Three shows the market for vaping products at equilibrium, with equilibrium price (P_e) and equilibrium quantity (Q_e).

Graph Three: The market for vaping products – impact of an indirect tax



(b) (i) Complete Graph Three above by identifying and labelling the new equilibrium price (P_2) and quantity (Q_2) as a result of an indirect tax.

(ii) Use the numbers from Graph Three to complete Table One, below.

Table One

	Before indirect tax	After indirect tax
Consumer surplus		
Producer surplus		
Total tax revenue		
Deadweight loss		

Refer to Table One above and Graphs Two and Three in your answer to part (c).

(c) Compare and contrast the impact of the two interventions on allocative efficiency and the Government's aim of discouraging the consumption of vaping products.
In your answer explain why:

- the market is allocatively efficient when the number of retailers is restricted, but not with an indirect tax
- imposing an indirect tax might be better for the Government than restricting the number of retailers.

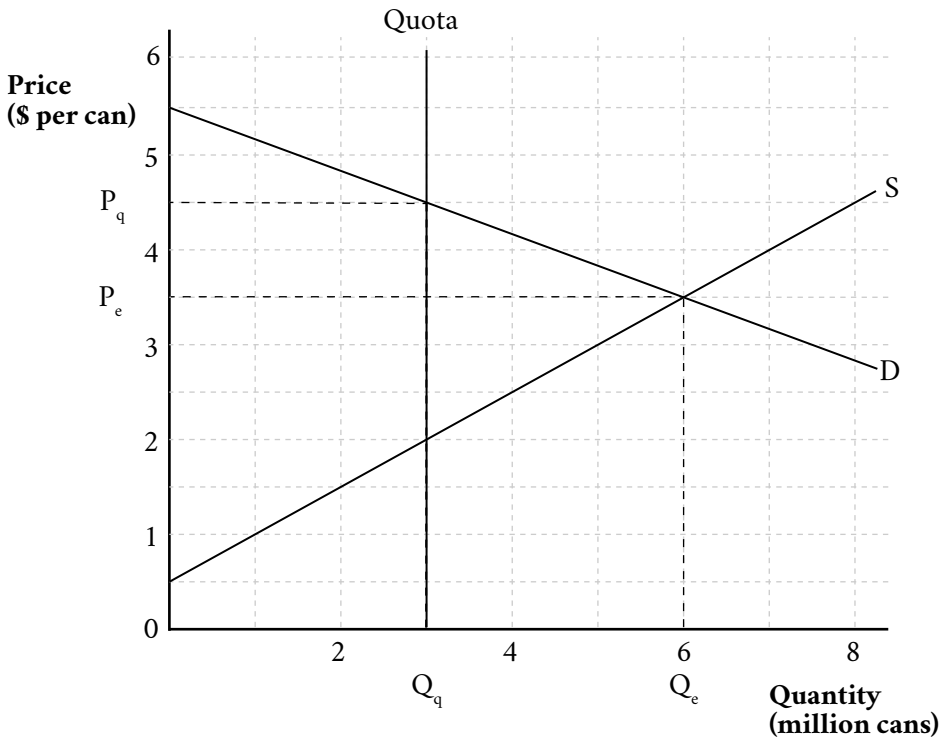
QUESTION THREE: Impact of a quota and minimum price control

Source: Life Education Trust.(n.d.) *What am I drinking?* Life Education Trust. https://www.lifeeducation.org.nz/in-schools/resources/599?page=1&search

To limit the consumption of energy drinks, the Government could impose a quota limiting the quantity bought and sold to 3 million cans a year.

Graph Four shows the market for energy drinks at the original equilibrium with equilibrium price (P_e) and equilibrium quantity (Q_e), and the new equilibrium price (P_q) and quantity (Q_q) as a result of the quota.

Graph Four: The market for energy drinks per year – impact of a quota



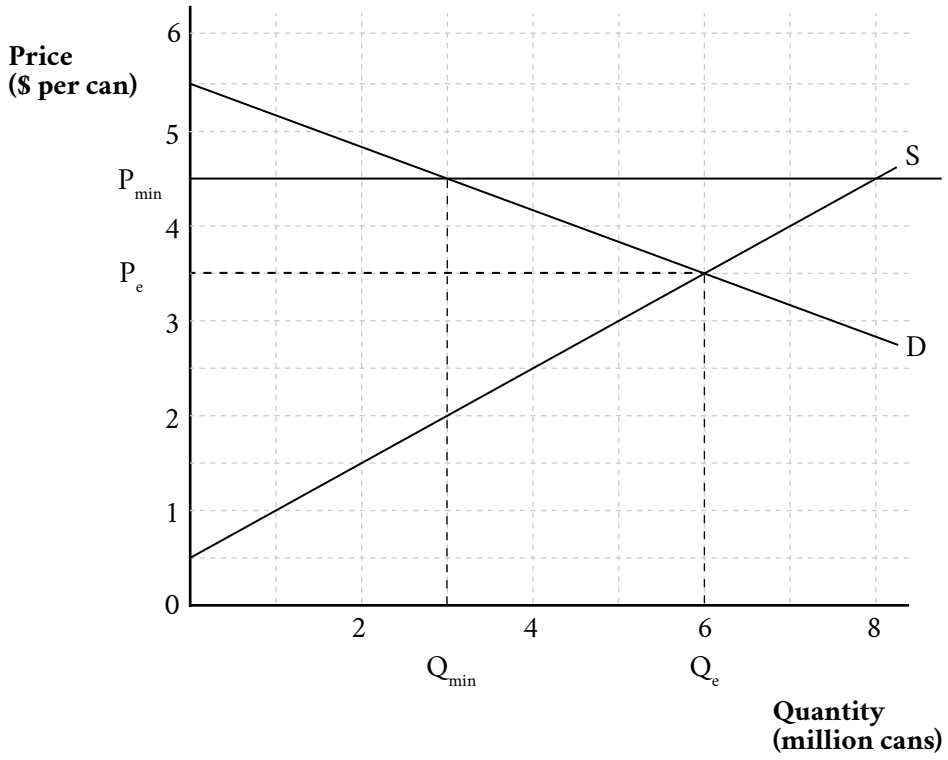
(a) (i) On Graph Four above, show the impact of the quota by shading in the:

- new consumer surplus ( )
- new producer surplus ( )
- deadweight loss ( )

The Government could also discourage consumption of energy drinks by implementing a minimum price control.

Graph Five shows the market for energy drinks at the original equilibrium with equilibrium price (P_e) and equilibrium quantity (Q_e), and the new equilibrium price (P_{min}) and quantity (Q_{min}) as a result of a minimum price control set at $4.50 per can.

Graph Five: The market for energy drinks per year – impact of a minimum price control



(ii) On Graph Five above, show the impact of the minimum price by shading the:

- new consumer surplus ( )
- new producer surplus ( )
- deadweight loss ( )

(iii) Complete Table Two below by calculating the values from Graph Four and Graph Five.

Table Two

	Quota – Graph Four ($ million)	Minimum price – Graph Five ($ million)
Original consumer surplus		
New consumer surplus		
Original producer surplus		
New producer surplus		
Deadweight loss		

Refer to Graphs Four and Five and Table Two on page 11 in your answer to part (b).

(b) Explain in detail the impact the quota and minimum price control might have on the following:

(i) Consumer surplus

(ii) Producer surplus

(iii) Allocative efficiency

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QUESTION NUMBER

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