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90986



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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Level 1 Economics, 2017

90986 Demonstrate understanding of how consumer, producer and/or government choices affect society, using market equilibrium

9.30 a.m. Friday 10 November 2017

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of how consumer, producer and/or government choices affect society, using market equilibrium.	Demonstrate in-depth understanding of how consumer, producer and/or government choices affect society, using market equilibrium.	Demonstrate comprehensive understanding of how consumer, producer and/or government choices affect society, using 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 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 2–8 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.

Excellence

TOTAL

24

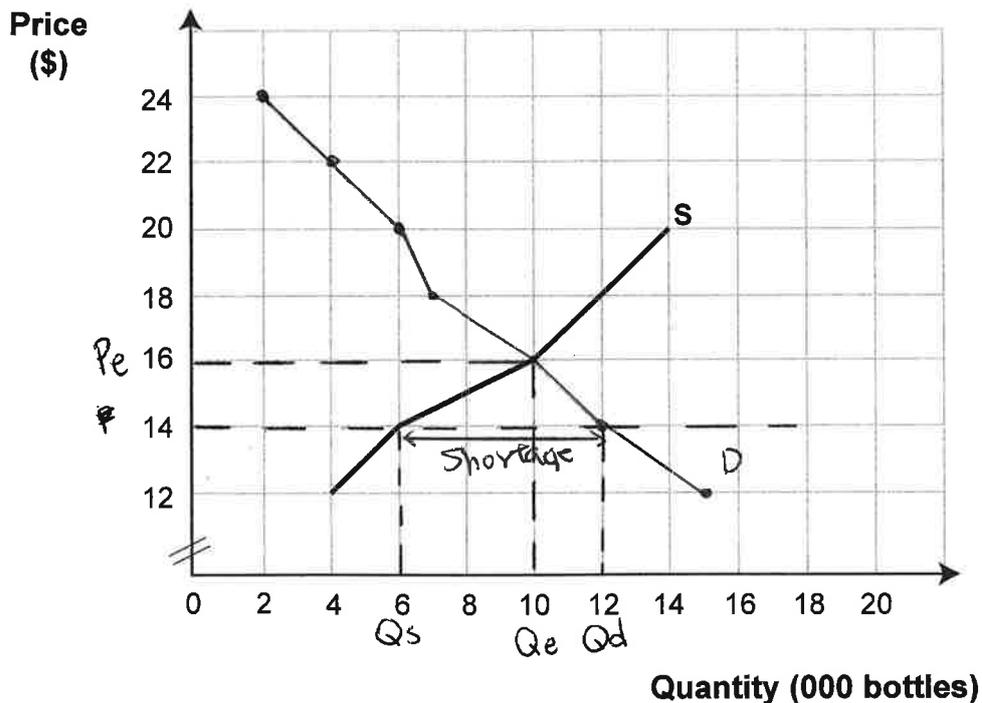
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QUESTION ONE: MARKET EQUILIBRIUM

The table and graph below indicate the market for Vitamin C tablets (large bottle) in New Zealand per month.

Market demand for Vitamin C tablets (large bottle) in New Zealand (monthly)

Price (\$)	South Island (000s)	North Island (000s)	Market demand (000s)
24.00	0.5	1.5	2
22.00	1	3	4
20.00	2	4	6
18.00	3	4	7
16.00	4.5	5.5	10
14.00	5.3	6.7	12
12.00	7	8	15

Market for Vitamin C tablets (large bottle) in New Zealand (monthly)

- (a) Use the information above to:
- complete the market demand schedule
 - draw the market demand curve
 - use dotted lines to indicate the market equilibrium price (P_e) and market equilibrium quantity (Q_e).
- (b) On the graph above, show the market situation if the price of a large bottle of Vitamin C tablets was \$14.00.

In your answer:

- use dotted lines to show the quantity demanded (label as Q_d)
- use dotted lines to show the quantity supplied (label as Q_s)
- fully label the resulting surplus or shortage.

- (c) Using the graph on page 2, fully explain how the market would respond to the situation at \$14.00 in order to restore equilibrium.

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In your answer, explain:

- the resulting surplus or shortage
- the change required in market price
- the change in quantity demanded and quantity supplied.

When the price of Vitamin C tablets is at \$14, a shortage of 6,000 bottles would occur as consumers' quantity demanded of 12,000 bottles (Q_d) exceeds producers' quantity supplied of 6,000 bottles (Q_s) per month.

Consumers will respond to this situation by bidding up the price in order to purchase Vitamin C tablets. As the price increases from \$14 to

\$16 (P_e), consumers' quantity demanded would decrease from 12,000 bottles (Q_d) to 10,000 bottles (Q_e)^{per month} since it is less affordable

for them to demand (law of demand, *ceteris paribus*: only price changes, all other factors, e.g. tastes and preferences remains unchanged)

On the other hand, producers' quantity supplied would increase from 6,000 bottles (Q_s) to 10,000 bottles (Q_e)^{per month} because it is more

profitable for them to supply when they are more able to cover the costs of production (law of supply, *ceteris paribus*).

This process will continue until there is no shortage (or surplus), when producers' quantity supplied of 10,000 bottles (Q_e) Vitamin C

tablets equals to consumers' quantity demanded of 10,000 bottles (Q_e) per month at the equilibrium price of \$16 (P_e), when the market is cleared.

ES

QUESTION TWO: MAXIMUM PRICE

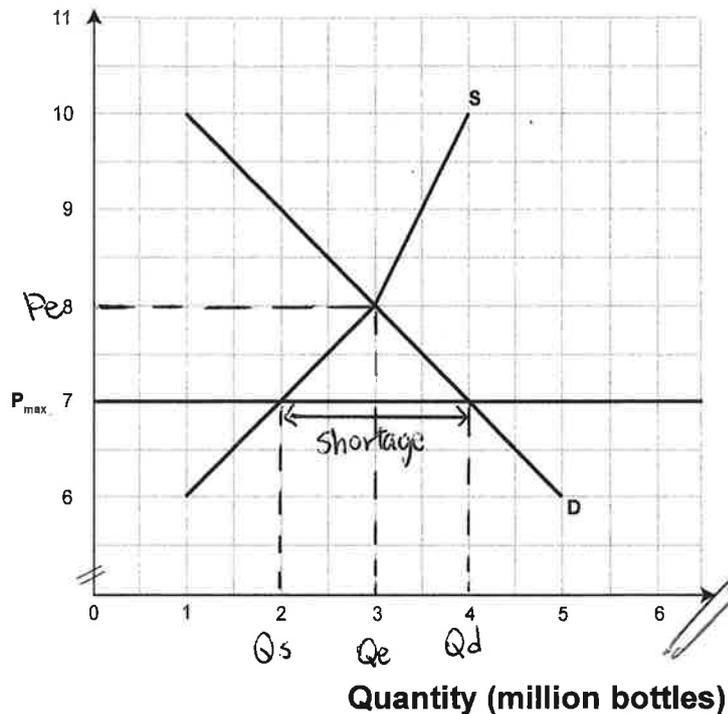
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Taking Vitamin C supplements has been linked to preventing the common cold. Evidence suggests that if people take Vitamin C, a cold does not last as long and it is not so bad.

Source (adapted): <http://sciencelearn.org.nz/Contexts/Food-Function-and-Structure/Looking-Closer/Vitamin-C>

The graph below shows the effect of a maximum price of \$7 per small bottle on the market for Vitamin C.

Price (\$)
New Zealand market for Vitamin C (small bottle) annually



- (a) On the graph above, show the changes to quantity demanded and quantity supplied of Vitamin C (small bottles), as a result of a maximum price.

In your answer:

- use dotted lines to show the equilibrium price and equilibrium quantity before the maximum price (label as P_e and Q_e)
- use dotted lines to show the new quantity demanded by consumers after the maximum price (label as Q_d)
- use dotted lines to show the new quantity supplied by Vitamin C suppliers after the maximum price (label as Q_s)
- fully label the resulting surplus or shortage.

- (b) Use the graph above to complete the table below.

	Before maximum price	After maximum price
Quantity demanded by consumers	3,000,000 bottles	4,000,000 bottles
Quantity supplied by producers	3,000,000 bottles	4,000,000 2,000,000 bottles
Price received by producers	\$ 8	\$ 7
Revenue received by producers	\$ 24,000,000 ($P_e \times Q_e$)	\$ 14,000,000 ($P_{max} \times Q_s$)

- (c) Use the graph on page 4 and your calculations to fully explain the effect on consumers of introducing a maximum price.

In your answer, fully explain the change in:

- price paid by the consumer
- quantity demanded
- consumer spending.

When the maximum price is set by the government to prevent consumers from paying high price for Vitamin C (small bottle), consumers is now pay \$1 less from \$8 (P_e) to \$7 (P_{max}). This would result in consumers' quantity demanded increased from 3 million bottles (Q_e) to 4 million bottles (Q_d) per years increased by 1 million bottles, as Vitamin C (small bottle) are now more affordable for consumers to demand (law of demand, ceteris paribus \rightarrow all factors other than price, e.g tastes and preferences remains the ~~same~~ ^{same}). However, a shortage of 2 million bottles of Vitamin C would occur as producers would decrease their quantity supplied from 3 million bottles (Q_e) to 2 million bottles (Q_s) per year because they are less profitable for producers to supply since they producers are less able to cover the costs of production (law of supply, ceteris paribus). While the maximum price of \$7 (P_{max}) is legally required, the equilibrium cannot be restored, this means consumers spending ~~will~~ ^{will} decreased from ($P_e \times Q_e$) \$24,000,000 to ($P_i \times Q_s$) \$14,000,000 decreased by \$10,000,000 when producers is only willing to supply 2 million bottles of Vitamin C (small bottles) per year. (Q_s)

- (d) Fully explain TWO flow-on effects for society of introducing a maximum price.

A flow-on effect would be since consumer could only consume 2 million bottles of Vitamin C (small bottles) per year (Q_s), which is 1 million bottles less than before, consumers the general society's health will decrease since more people will suffer from the cold, which means the government may have to spend more on health care. Another flow-on effect is ^{an illegal} ~~an illegal~~ black market where consumers ^{pays} paying more than maximum price, \$7 (P_{max}) in order to purchase may occur, because ~~costs~~ when consumers are ~~demand~~ demanding 2 million bottles more (Q_d) than the producers are supplying, they will be more willing to pay at a higher price in order to purchase Vitamin C (small bottles).

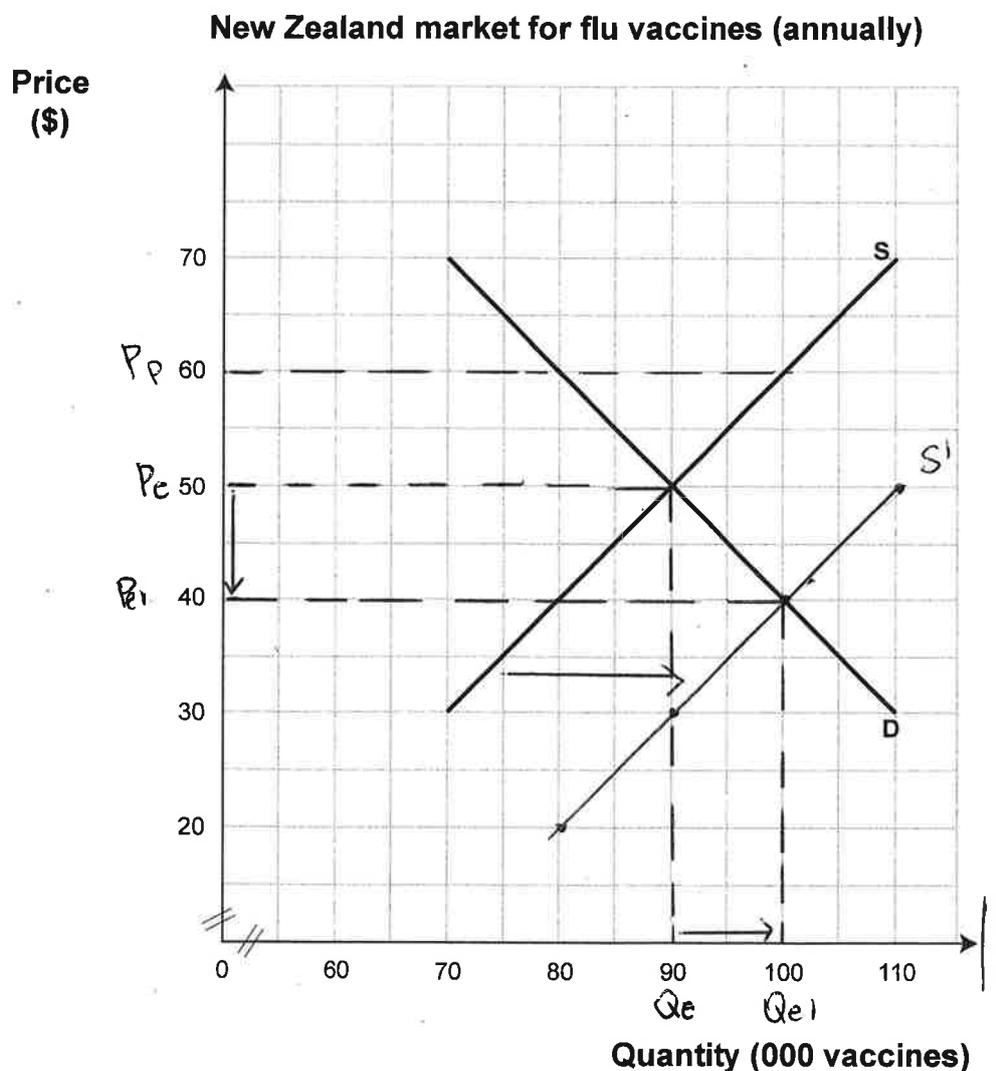
QUESTION THREE: SUBSIDY

One way that the government may prevent people from getting the flu is to subsidise the flu vaccine.

- (a) On the graph below, show the impact of a \$20 subsidy per vaccine on the market for flu vaccines.

In your answer:

- use dotted lines and label the original equilibrium price (P_e) and equilibrium quantity (Q_e)
- shift and relabel the appropriate curve
- use dotted lines to show the new equilibrium price (P_{e1}) and new equilibrium quantity (Q_{e1}).



- (b) Explain the immediate financial effect on the government from the subsidy on flu vaccines.

The immediate financial effect ^{on} the government because of the ~~subsidy~~ \$20 subsidy per vaccine on the flu vaccines is that they will spend \$2,000,000 on subsidising flu vaccines, which means they may not be able to use these amounts on other areas, e.g. road work.

- (c) Fully explain ONE possible long-term benefit to society from the subsidy on flu vaccines.

A long-term possible benefit on the society is since the consumption of flu vaccines increased from 90,000 vaccines (Q_e) to 100,000 vaccines (Q_e1) per year, ~~the~~ the people who take ~~the~~ flu vaccines would increase. This means less people would ~~not~~ get the flu, which improves general health in the society. The government then ~~would not~~ could spend the subsidy on other areas, e.g. road work, since they do not need to spend as much on health care in the future. ||

- (d) Using the graph on page 6, and any additional calculations, discuss the impact of a subsidy on producers. In your answer, fully explain:

- the effect on equilibrium quantity
- the change in price received by producers
- the change in producer revenue.

Subsidy is the payment by government to encourage producers' production on flu vaccines. This would increase producers' supply as ~~it would~~ these \$20 subsidy would help them to cover the costs of production, which means producing flu vaccines are now ^{more} profitable for them since they could obtain more profit (Revenue - costs) ^{when the difference between selling price and costs of production increases}. They would be more willing and able to ~~supply~~ supply flu vaccines at each and every price, shown as shift to the right on supply curve, $S \rightarrow S1$. ||

After the \$20 ^{has} been given onto flu vaccines, consumers are now paying \$10 less from \$50 (P_e) to \$40 (P_e1). This results in their quantity demanded ~~of~~ increased from 90,000 vaccines (Q_e) to 100,000 vaccines (Q_e1) per year, since flu vaccines are now more affordable for them to purchase (law of demand, ceteris paribus = all factors other than ^{than} price, e.g. tastes and preferences remain unchanged). The price received by producers would increase from \$50 (P_e) to \$60 (P_p) as they are now receiving \$20 more on flu vaccines' selling price per vaccines sold. These increased in price received and quantity sold ~~due to~~ from 90,000 vaccines (Q_e) to 100,000 vaccines (Q_e1) due to consumers' quantity demanded increased will increase producers' revenue from ($P_e \times Q_e$) \$4,500,000 to ($P_p \times Q1$) \$6,000,000, increased by \$1,500,000 per year. ||

E8

Excellence exemplar 2017

Subject:	Economics	Standard:	90986	Total score:	24
Q	Grade score	Annotation			
1	E8	<p>Although not required for E, this candidate has correctly completed the graph and table.</p> <p>Candidate correctly identifies a shortage using correct data (6000), and explains what a shortage is ($QD > QS$).</p> <p>Candidate then explains that the Consumer bids the price up in order to obtain the vitamin C.</p> <p>The laws of demand and supply are correctly applied to this situation, with the use of ceteris paribus and reasons (affordability and profitability).</p> <p>Then the candidate correctly explains at what point equilibrium is established (\$16 and 10000 bottles).</p>			
2	E8	<p>Although not required for E, this candidate has correctly completed the graph, including drawing and labelling the shortage correctly.</p> <p>Candidate has correctly calculated all figures in (b).</p> <p>Candidate then explains a maximum price, using correct figures (\$8 to \$7) and explains (further down the page) how it is legally required to adhere to this price maximum.</p> <p>Candidate then explains that the decrease in price is related to the increase in quantity demanded, using correct figures (3m to 4m) and that this is more affordable for consumers.</p> <p>Candidate then explains the consumer spending has decreased, using correct figures and that this is due to the decrease in quantity supplied, which creates a shortage.</p> <p>Two flow on effects that then been correctly explained – in this case, the candidate mentioned a decline in society’s health and the introduction of a black market.</p>			
3	E8	<p>Although not required for E, this candidate has correctly completed the graph, with appropriate labelling and shifting the supply curve to the right. Also, not required for E, this candidate correctly explains the immediate financial effect on the government of having to spend \$2 million on subsidising the flu vaccine. Then a long-term benefit to society is explained that since the vaccine has been subsidised, more people will utilise the vaccine and thus, general health would improve and money that would have been spent on healthcare could now be redistributed.</p> <p>In (d) this candidate then correctly connects the increase in supply (shown as a shift to the right, S to S1 (referring to the graph)), to the quantity demanded increasing (90 000 to 100 000 – ie: with data). The candidate then explains how the price received by producers has increased using data (\$50 to \$60), and links this to the increase in producer revenue – through referring to the graph ($P_e \times Q_e$) v ($P_p \times Q_{e1}$) and data (\$4500000 to \$6000000).</p>			