

# THE JOYS of MARKETS

(2014 Edition)



## YEAR 13 ECONOMICS

Covering NCEA Level 3 Achievement Standards 3.1, 3.2 and 3.3

by  
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## Introduction to the Revised Edition for 2014

Hello

I have updated this text for 2014 to cover the Achievement Standards for Level 3. This text covers the **Standards 3.1, 3.2 and 3.3**. This edition includes new assessment resource material for the external standards.

- 3.1 Demonstrate an Understanding of the Efficiency of Market Equilibrium (External).
- 3.2 Demonstrate an Understanding of the Efficiency of Different Market Structures (Perfect Competition and Monopoly only) using marginal analysis (External).
- 3.3 Demonstrate an Understanding of Micro Economic Concepts (Internal).

My thoughts are that the changes require little adjustment to existing programs in the sequence of topics. It would be unwise to teach each standard in isolation as many of the concepts require a holistic approach.

### Key Points

- **Unit 3.1** emphasises how markets tend to achieve efficient outcomes in maximising consumer and producer surplus. It also emphasises the dynamics of changes in a market. It also explores the effects of changes in the market on efficiency and producer/consumer surplus. These changes include various government interventions and international trade.
- **Unit 3.2** explores the market structures of perfect competition and monopoly only. This includes natural monopolies. It also includes the implications of different government intervention on efficiency in a monopoly market.
- **Unit 3.3** includes all the other micro concepts currently covered including other market structures.

This revised text is designed to incorporate these changes. It also contains practice assessment tasks for Units 3.1 and 3.2.

I hope the text provides an easy to use resource for you.

Thanks

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# Applications of Supply and Demand Analysis

(Achievement Standard 3.1)

## Introduction

This section uses the supply and demand model of a market to examine different economic issues.

The section explores:

- The effects of an indirect tax on a market for a good.
- The effects of a subsidy on a market for a good.
- The patterns of international trade between a country and the rest of the world.
- The market for labour and how it sets the wage rate for workers.

## Key Points

### Remember demand is based on marginal utility

A person's demand for an item is based on their marginal utility. A person will only buy an extra unit of a good if their marginal utility (satisfaction) from this unit is greater than (or equal to) the price they pay. Their demand curve slopes down to the right because as more units are consumed their marginal utility falls and therefore the price they are willing to pay for an extra unit falls.

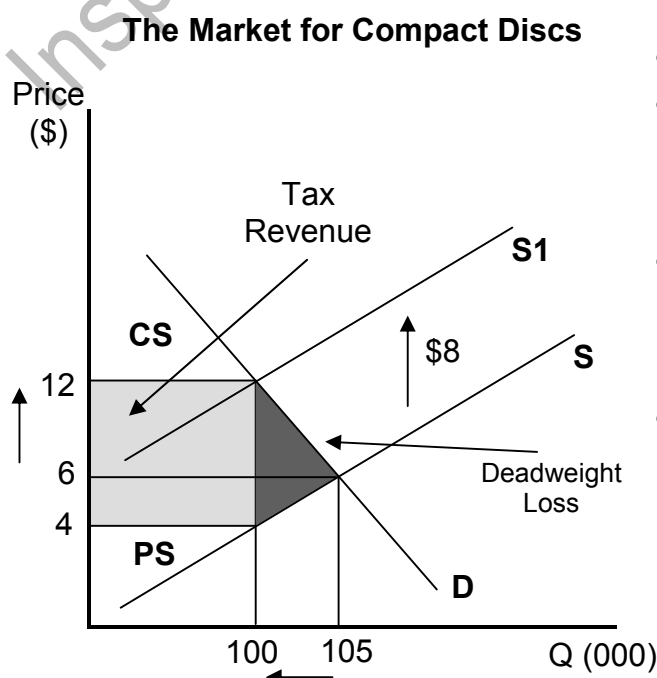
### Remember supply is based on a firm's marginal cost above AVC

A competitive firm will only supply extra units if the price it receives is above (or equal to) the marginal cost of that unit. The price must also be above AVC or the firm should shut down in the short run.

## Indirect Taxes

An indirect tax is a tax on a good or service. It increases the costs of production for producers who are usually able to pass some of the tax on to consumers in higher prices. It is called an indirect tax because the consumers are indirectly paying the tax via producers to the Government.

An indirect tax increases the marginal cost of each item by the tax per unit. This causes the supply curve to move in (up) vertically by the tax per item as shown in the diagram below.



- \$8 tax per CD.
- Tax revenue to government  
 $\$8 \times 100(000) = \$800,000$ .
- Incidence on consumers  
 $\$6 \times 100(000) = \$600,000$ .
- Incidence of tax on producers  
 $\$2 \times 100(000) = \$200,000$ .



The effects of an indirect tax on a market are to:

- Increase the costs of production and therefore decrease supply.
- Increase the price and reduce quantity demanded.
- Provide tax revenue to the Government.
- Reduce consumer and producers surplus.
- Create a deadweight loss.

The incidence of tax means who actually has to pay the tax. If most of the tax is passed on to consumers through a higher price then demand must be inelastic.

Indirect taxes may be used to target demerit goods. These are goods that society believes are harmful for people to use such as cigarettes or alcohol. The effectiveness of an indirect tax in reducing consumption may be less effective if demand is inelastic.

## How Does an Indirect Tax Affect Efficiency in a Market?

An indirect tax causes a loss of efficiency (deadweight loss) because it increases the costs of production for producers. This results in a fall in output therefore total consumer and producer surplus has fallen.

### However:

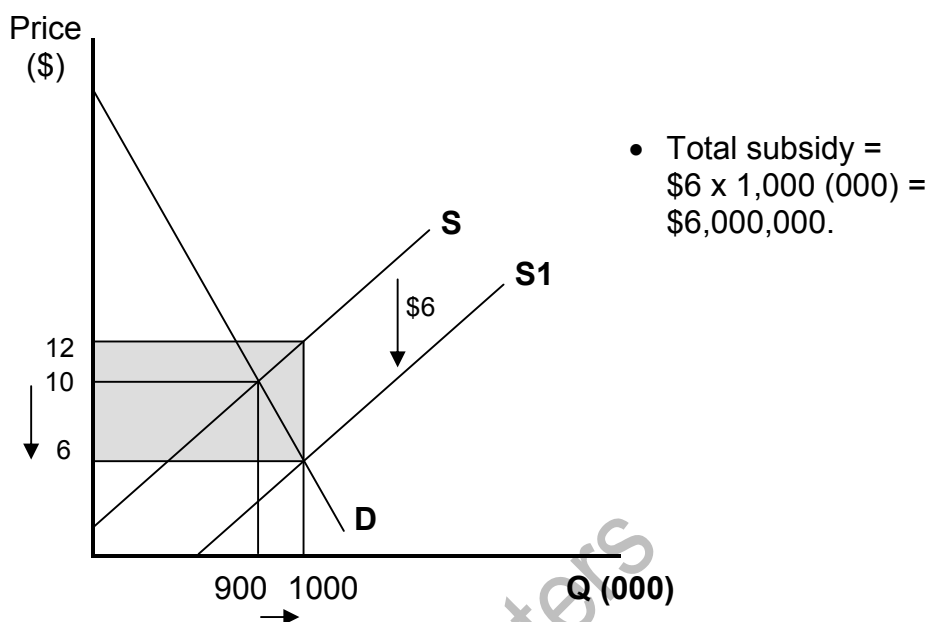
An indirect tax may be used to reduce output/consumption of a good that has harmful effects on society, e.g. cigarettes. This reflects the true costs to society of that good.

In such a situation an indirect tax may improve allocative efficiency by moving the market to a socially desirable equilibrium. Resource allocation has been improved because the social costs of the good have been recognised.

## Subsidies

A subsidy is a payment from government to producers to encourage output of an item. The subsidy reduces costs of production. It lowers the marginal cost of each unit by the subsidy per unit as shown on the following graph.

### The Market for Beta Blockers (Heart Pills)

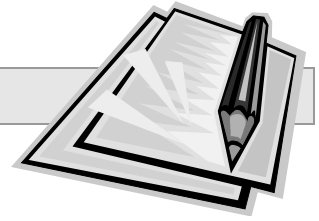


The effects of a subsidy are:

- Lower production costs and increased supply.
- Decreased price and increased quantity demanded.
- Increased consumer and producer surplus. This is because the consumers are now paying a lower price. The producers are receiving this price plus the subsidy per unit so they are effectively getting a higher price than before the subsidy.
- The subsidy costs the taxpayers money.
- If most of the subsidy is passed on to consumers in lower prices then demand must be inelastic.

A subsidy can be used for merit goods which society believes are beneficial for people to use. Many medicines are subsidised in New Zealand.

## Review Exercise

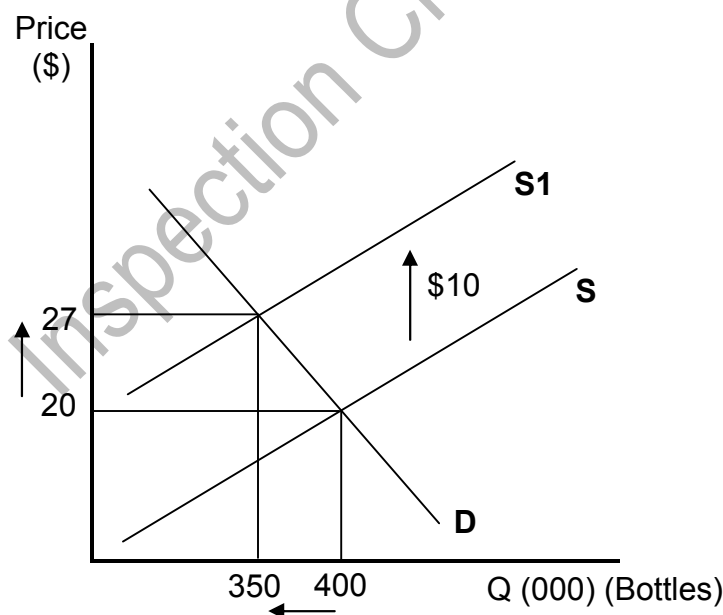


1. Complete the following paragraphs:

Demand is derived from a person's \_\_\_\_\_ which is the extra satisfaction from the last unit consumed. As more units are consumed the marginal utility will \_\_\_\_\_ therefore quantity demanded will only increase if \_\_\_\_\_ decreases.

Supply is derived from a firm's \_\_\_\_\_ above \_\_\_\_\_. This is because a firm will only supply extra units if price is greater than (or equal to) \_\_\_\_\_. If the price falls below \_\_\_\_\_ the firm will shut down in the short run.

**Indirect Tax on the Market for Bottles of Whisky**



2. Use the graph above to answer the following questions:

(a) Calculate the total tax revenue.

---

(b) Calculate the tax paid by consumers (incidence on consumers).

---

(c) Who pays most of the tax?

---

(d) Comment on the price elasticity of demand for whisky.

---



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(e) Shade the tax revenue and deadweight loss.

(f) What has happened to consumer surplus and why?

---



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(g) Why is there a deadweight loss?

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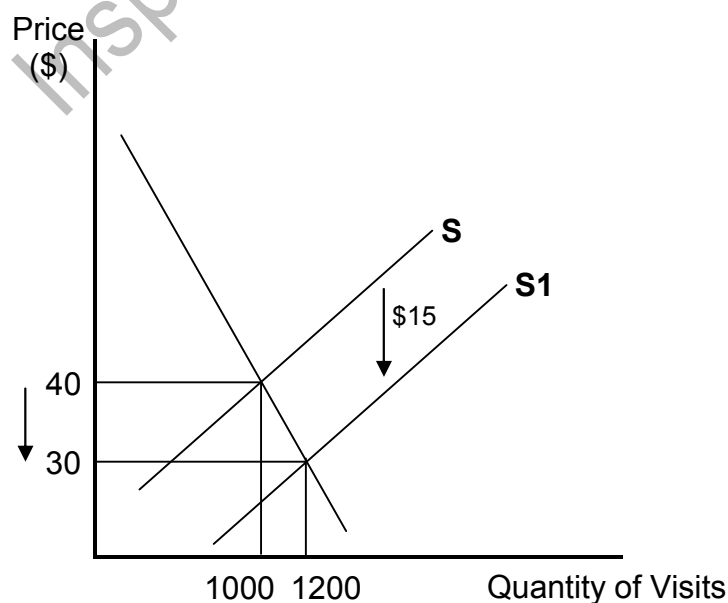
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(h) Calculate the \$ deadweight loss.

---

3. Use the graph below to answer the following questions.

### Subsidy for Doctor's Visits for the Elderly



- (a) Calculate the total subsidy paid by government.  
\_\_\_\_\_
- (b) Calculate the percentage of incidence of the subsidy on consumers.  
\_\_\_\_\_
- (c) What does this suggest about price elasticity of medical care for the elderly?  
\_\_\_\_\_  
\_\_\_\_\_
- (d) What has happened to consumer surplus and why?  
\_\_\_\_\_  
\_\_\_\_\_
- (e) Shade the new producer surplus on your previous graph.
- (f) Explain what has happened to producer surplus.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## International Trade and Supply and Demand Analysis

It is possible to use supply and demand analysis to look at patterns of trade between countries. International trade means the buying and selling of goods and services between countries. Countries trade because this allows them to specialise in producing the goods and services that their resources are best suited to producing.

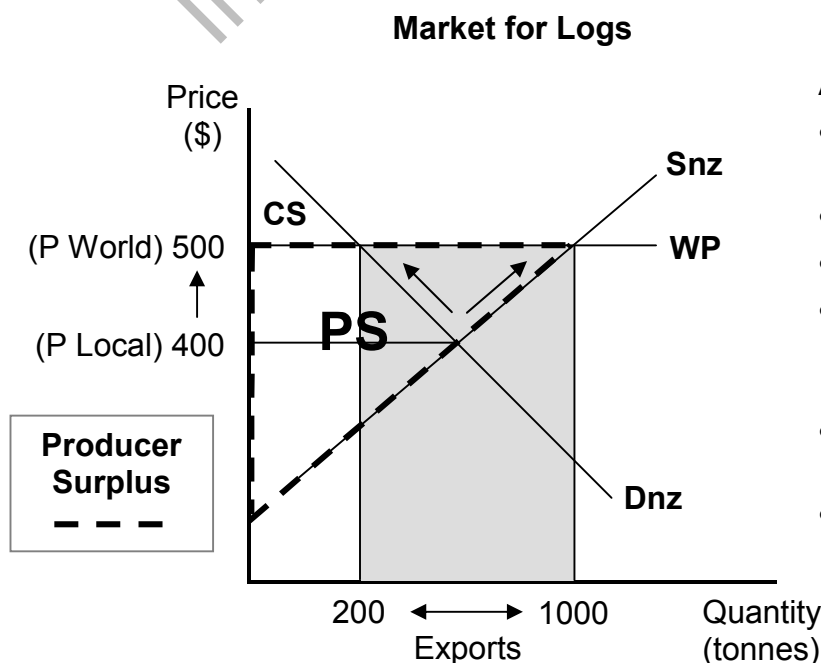
In developing a model of trade between one country and the rest of the world we must make some assumptions to keep our analysis simple.

### Assumptions of the Model

- The country is a price taker. It is too small to affect the world price for the item being traded. World price is therefore a horizontal line.
- The effects of transport costs and exchange rates are ignored.
- Free trade is assumed, i.e. there are no artificial barriers restricting trade such as tariffs or quotas.

### A Country that is an Exporter of a Good

In the diagram below the country is an exporter of logs. This is because before trade the world price for logs is above the local price. The world price for logs is horizontal because the country is a price taker on the world market.



After trade:

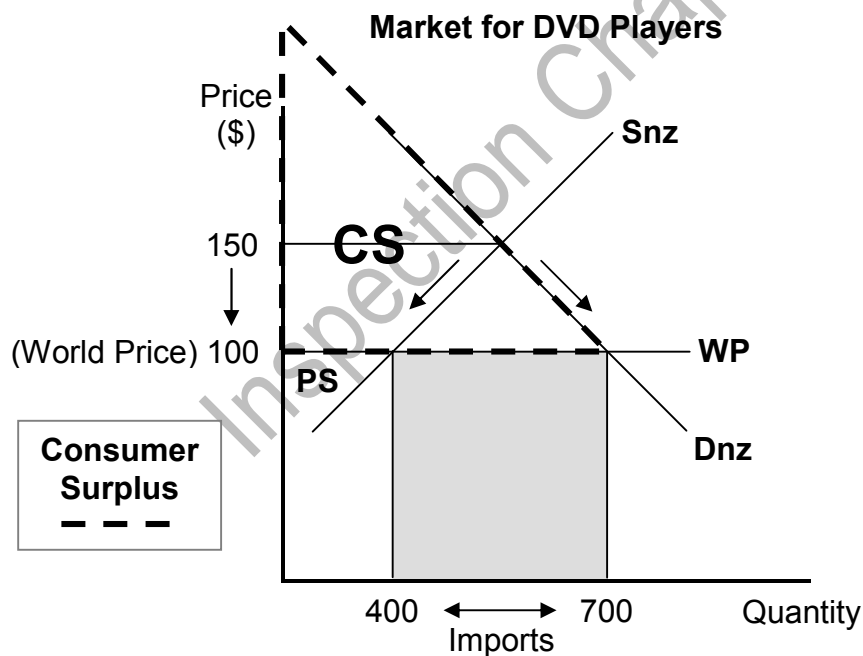
- Price rises to world price.
- Local QD↓.
- QS↑
- Exports 800 tonnes at \$500 = \$400,000
- Consumer Surplus↓
- Producer Surplus↑

The effects of trade with the rest of the world will be:

- The local price will increase to the world price (\$500) as local producers start selling logs overseas.
- Local quantity demanded will decrease (to 200 tonnes).
- Quantity supplied by local producers will increase to supply the world market (1,000 tonnes).
- Local consumer surplus will decrease and producer surplus will increase.
- The country will earn export revenue (800 tonnes @ \$500 = \$400,000).

## A Country that is an Importer of a Good

The diagram below shows the market for DVD players. The world price (\$100) is below the local price (\$150) before trade. Therefore the country will be an importer of the good.



The effect of trade with the rest of the world will be:

- The world price becomes the local price (to \$100).
- Quantity demanded by local consumers will increase (to 700).
- Quantity supplied by local producers will decrease (to 400).
- Consumer surplus will increase and local producer surplus will decrease.
- There will be import payments (300 x \$100 = \$30,000).

## The Effects of International Trade on Efficiency

Adam Smith argued for free trade between countries i.e. the removal of trade barriers such as tariffs. He believed that international trade increased the size of the market. This allows countries to make greater use of division of labour and specialisation. This would increase efficiency, output and living standards.

However international trade can create winners and losers in a market even though its overall benefits are positive. This is why it remains controversial.

The effect of New Zealand exporting milk is to increase the local price of milk to the world price. This causes producer surplus to increase because they are receiving a higher price but local consumer surplus decreases because they are paying a higher price. The overall effect is an increase in allocative efficiency because total producer and consumer surplus is greater than before trade.

**International trade should lead to an overall increase in total producer/consumer surplus. Allocative efficiency has improved.**

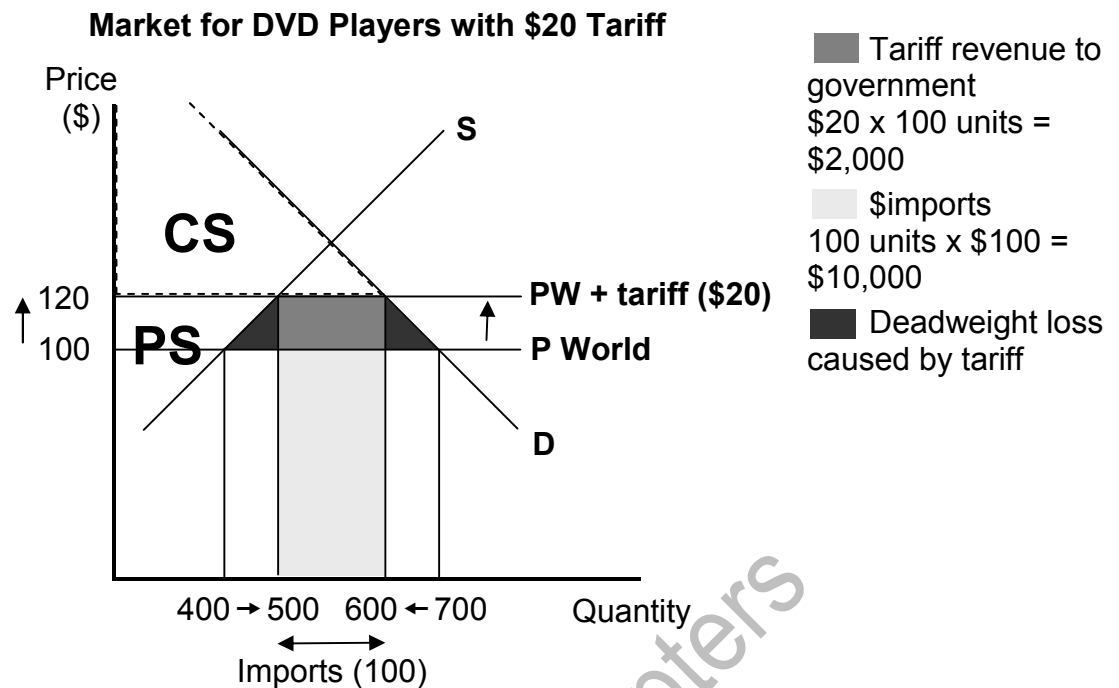
## Protectionism

A government may use protectionism to support local producers. Protectionism means the use of artificial trade barriers to assist local producers to compete against imports. The main forms of protectionism include tariffs, quotas and subsidies.

## The Effects of a Tariff on Trade

A tariff is a tax on imports. The effect is to raise the price that the local consumers have to pay by the amount of the tariff per item as shown on the following diagram.



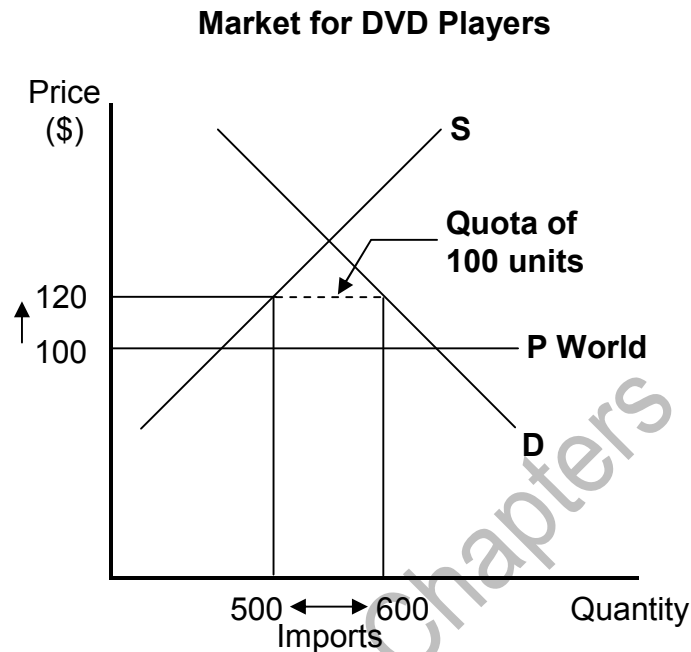


The effects of a tariff are :

- The price rises by the amount of the tariff per item (to \$120).
- Local quantity demanded falls (to 600).
- Local quantity supplied increases (to 500).
- Less imports (100 units).
- Consumer surplus falls and producers surplus rises.
- Government receives tariff revenue ( $\$20 \times 100 = \$2,000$ ).
- There is a deadweight loss due to a loss of allocative efficiency.

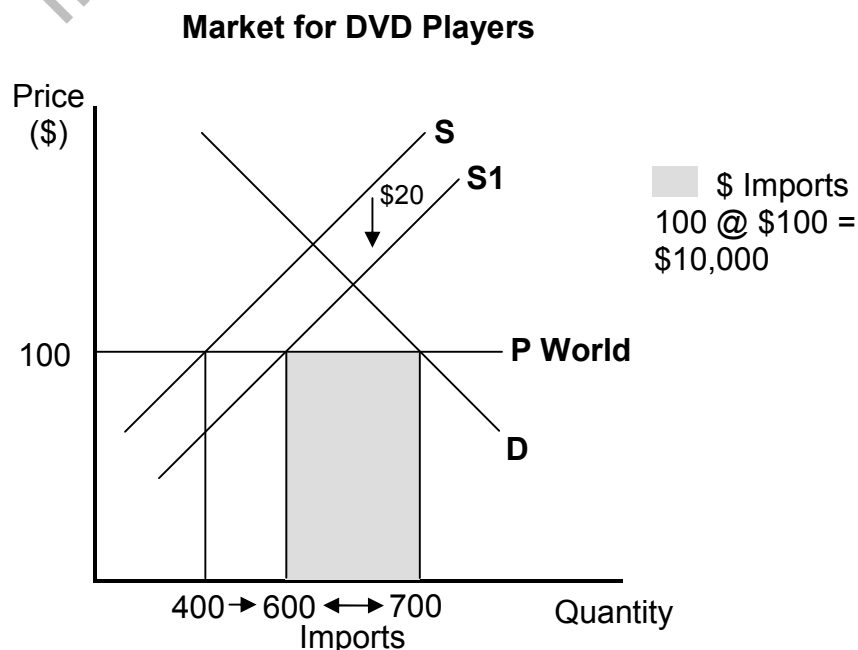
## The Effects of a Quota on Trade

A quota is a physical limit on the amount of an import that is allowed to be brought into the country. A quota has the same effects as a tariff as shown on the graph below except there is no tax revenue to the Government.



## The Effects of a Subsidy on Trade

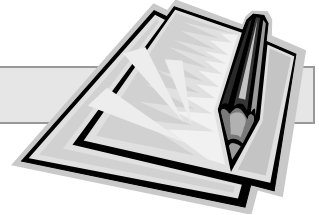
A subsidy is a payment by government to local producers which reduces their costs of production. This causes local supply to increase (because marginal cost per unit falls) as shown on the graph below.



The effects of a Subsidy are:

- Local supply increases.
- Price is unchanged at the world price (\$100).
- Imports decrease (100 units).
- There is a cost to the taxpayer of the subsidy (600 @ \$20 = \$12,000).

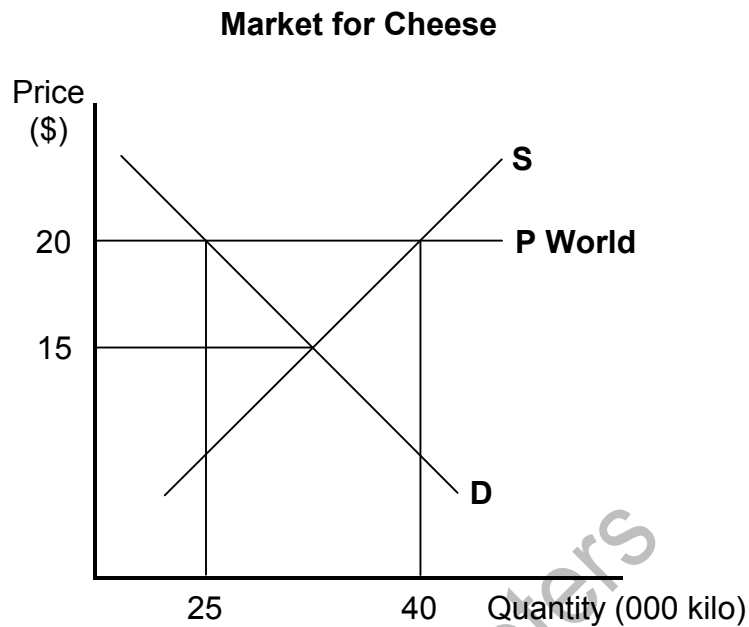
### Review Exercise



1. Complete the glossary below:

- (a) A country will be an exporter of a good if world price is \_\_\_\_\_ domestic price.
- (b) A country will be an importer of a good if world price is \_\_\_\_\_ domestic price.
- (c) International trade means the buying and selling of \_\_\_\_\_ and \_\_\_\_\_ between countries.
- (d) Free trade means there are no \_\_\_\_\_ restricting trade between countries.
- (e) A tariff is a \_\_\_\_\_.
- (f) A quota is a \_\_\_\_\_.
- (g) A subsidy is a \_\_\_\_\_.
- (h) When a country starts exporting a good the domestic price will \_\_\_\_\_. Quantity supplied by domestic producers will \_\_\_\_\_ and quantity demanded by local consumers will \_\_\_\_\_. The difference will be \_\_\_\_\_.

2. Use the following graph to answer the questions below.



- (a) Calculate the following amounts:
- Total value of exports:  
\_\_\_\_\_
  - Total revenue to producers:  
\_\_\_\_\_
  - Total spending by local consumers:  
\_\_\_\_\_
- (b) Shade and label on the graph the producer surplus and consumer surplus.
- (c) Explain how international trade has affected efficiency in the market.

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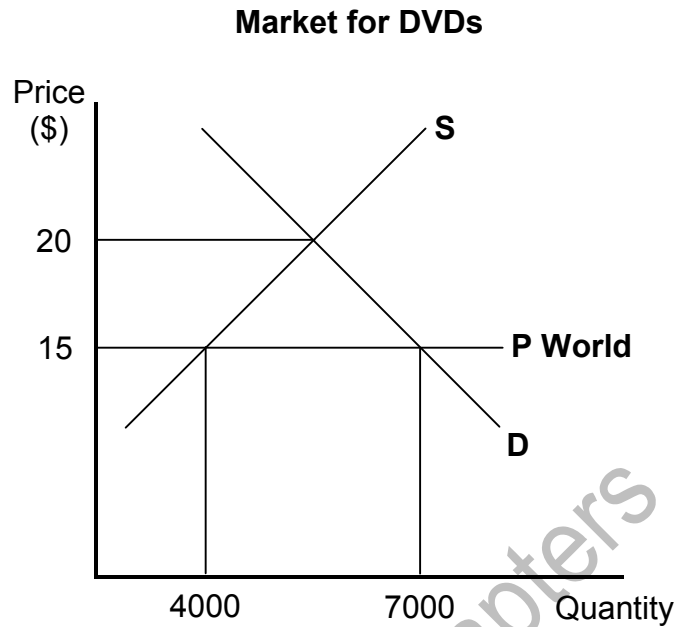


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3. Use the following graph to answer the questions below.



- (a) Calculate the following:
- (i) Total spending on imports.  
\_\_\_\_\_
  - (ii) Total revenue to local producers after trade.  
\_\_\_\_\_
- (b) Show on the graph the effect of the Government imposing a \$2 tariff on imports of DVD's.
- (c) Shade on the graph the tariff revenue.
- (d) Explain how the tariff has affected efficiency in the market.

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## The Market for Labour and Supply and Demand Analysis

The market for workers sets the wage rate in an industry or a country through supply and demand. The wage rate is the price that workers get for selling their services. We use real wage rate ( $W/P$ ) rather than money (nominal) wage rate. **Real wage rate is the money wage rate adjusted for inflation.** For example if workers receive a 5% increase in their money wages but inflation is 3% then their real wages have only risen by 2%.

It is possible to examine how wage rates are determined in the market for labour for a particular industry or an entire economy.

### Key Definitions

- The labour force are those people of working age (16-65) who are willing and able to work in an economy.
- Labour force participation rate is the percentage of people of working age who are part of the labour force. Labour force participation will be lower if there are many people in tertiary study or full time parents.
- Unemployment rate is the percentage of the labour force that are not working.

### Determining the Wage Rate in an Industry

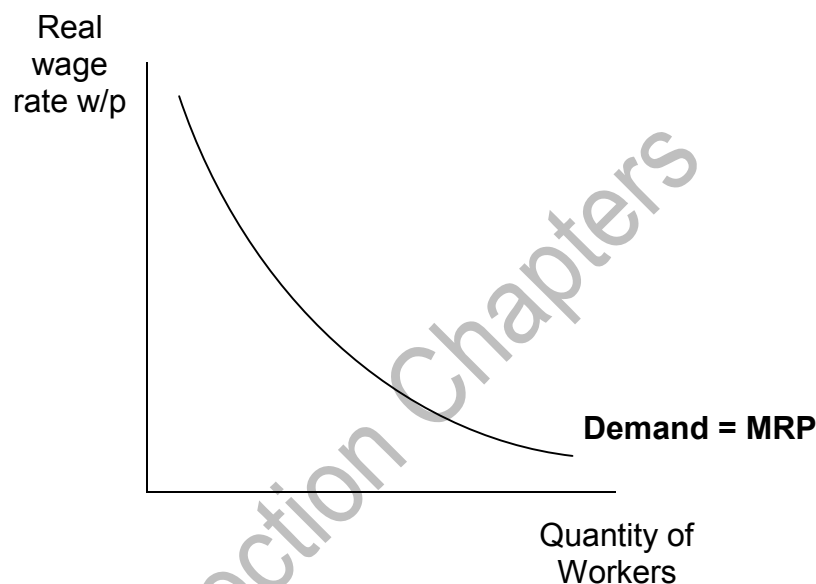
The demand for labour is called derived demand because it depends on the demand for the final product that the worker produces. The demand for labour in an industry depends on the marginal revenue product of labour in that industry.

**Marginal revenue product (MRP) is determined by the marginal product of the worker as well as marginal revenue from the output produced by that worker.**

A profit maximising firm will only employ an extra worker if the MRP of that worker is greater than or equal to the wage paid for that worker i.e. a firm will only employ a worker if he generates more revenue than he is paid.

The demand curve for workers in an industry is therefore the same as the MRP curve. It is downward sloping because of diminishing returns, i.e. as extra workers are employed their marginal product falls.

### Demand Curve for Workers in an Industry

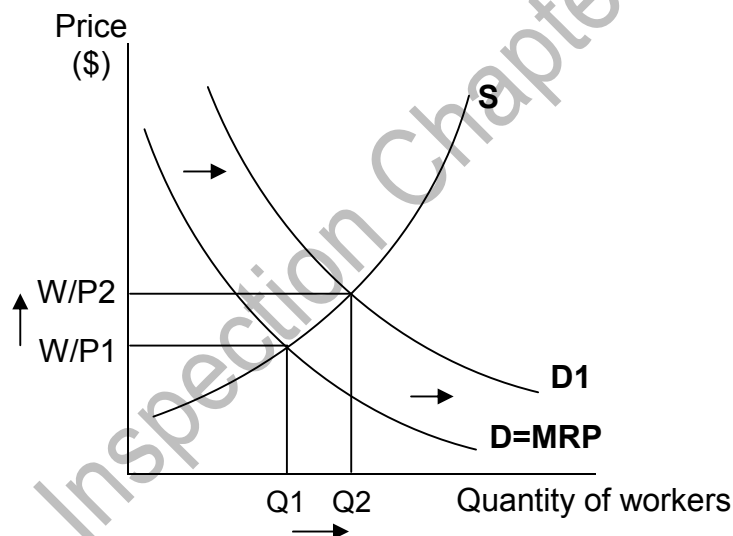


The supply of workers means the number of people who are willing and able to work at a given wage rate in that industry.

The supply of workers in an industry will depend on such factors as the wage rate, qualifications required, experience and training required, necessary skills, working conditions, level of unemployment benefits, migration and age structure of the population.

General Factors Affecting Demand for Labour in an Industry	General Factors Affecting Supply of Labour in an Industry
<ul style="list-style-type: none"> <li>• Demand for the final product</li> <li>• Price of the final product</li> <li>• The productivity of labour</li> </ul>	<ul style="list-style-type: none"> <li>• Training needed</li> <li>• Qualifications required</li> <li>• Skills required</li> <li>• Population size and age</li> <li>• Migration</li> <li>• Experience required</li> <li>• Health and safety</li> <li>• location</li> </ul>

### The Market for Apple Pickers Showing an Increase in Apple Prices



The graph above shows the market for apple pickers which sets a real wage of  $W/P1$  per hour. An increase in the price of apples has caused the demand curve for pickers to shift right (more demand) leading to a higher wage rate and more pickers employed.



## The Impact of Unions on a Labour Market

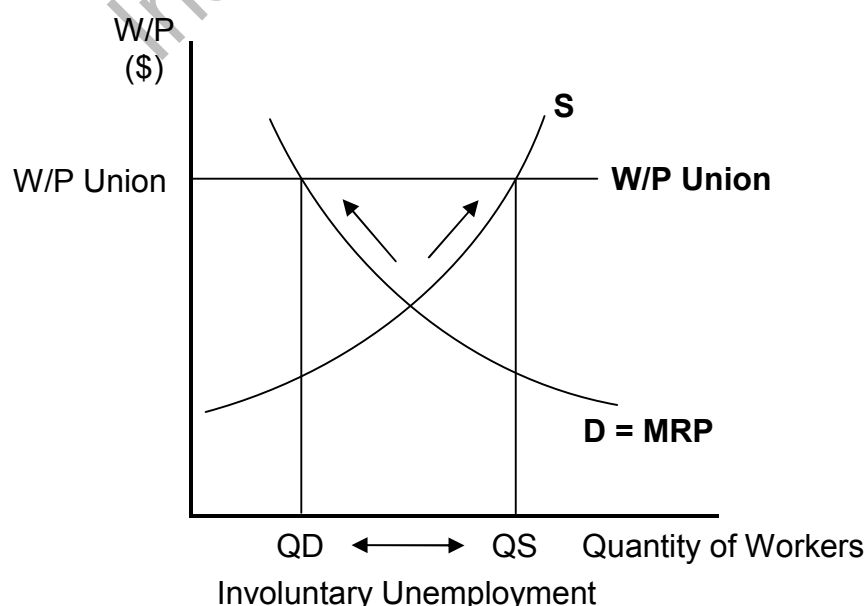
In some industries workers may form unions to negotiate with firms on their behalf for better pay and conditions. This is called collective bargaining. The power of a union to negotiate will depend on such factors as the number of members as a % of workers in that industry, the skills or qualification required in that industry and the elasticity of demand for the final product. (Inelastic demand for the final product would allow the firms to pass on wage increases through higher prices).

A union that has full membership of all workers in an industry that requires high skill levels and training and produces a necessity would be in a very powerful bargaining position. A union representing Doctors would usually have more power than a supermarket workers union.

If the union negotiates a wage rate above equilibrium in a labour market as shown below it will have the following effects:

- Wage rate will increase above equilibrium.
- Quantity demanded of workers by firms will decrease.
- Quantity supplied of workers will increase.
- There will be involuntary unemployment in that industry.
- There will be a deadweight loss.

### Market for Car Factory Workers After Their Union Negotiates a Wage Rate Above Equilibrium



## The Market for Labour in an Economy

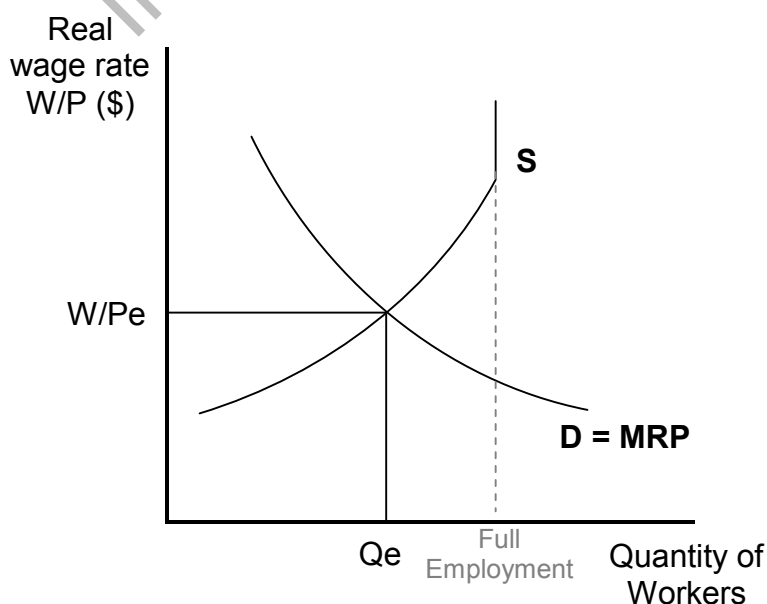
It is possible to use demand and supply analysis to see how the average wage rate is determined for an entire economy.

The demand for labour is determined by the marginal revenue product of labour in that economy. This depends on the productivity of labour (MP) as well as the marginal revenue received for the output produced.

The supply of labour in an economy depends on such factors as the size of the working age population (16 to 65 in NZ), the labour force participation rate, unemployment benefits, migration, retirement and school leaving age.

Demand for Labour in an Economy	Supply of Labour in an Economy
<ul style="list-style-type: none"> <li>• Productivity of labour</li> <li>• The demand for final output</li> <li>• The prices received for final output</li> </ul>	<ul style="list-style-type: none"> <li>• The population size and age structure</li> <li>• Retirement age</li> <li>• School leaving age</li> <li>• Benefit levels</li> <li>• Migration</li> <li>• Labour force participation rates</li> </ul>

### The Market for Labour for an Economy

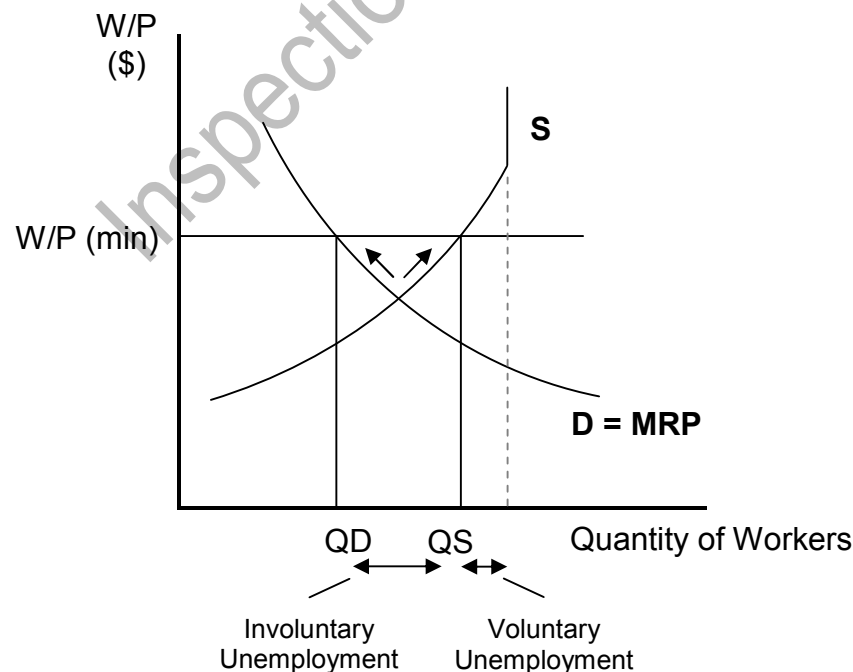


**Note:**

- The supply of labour refers to those who are willing and able to work at a given wage rate.
- The supply curve becomes vertical at full employment levels.
- Voluntary unemployment are those in the labour force who are not willing to work at the current wage rate.

**Government Intervention in the Labour Market**

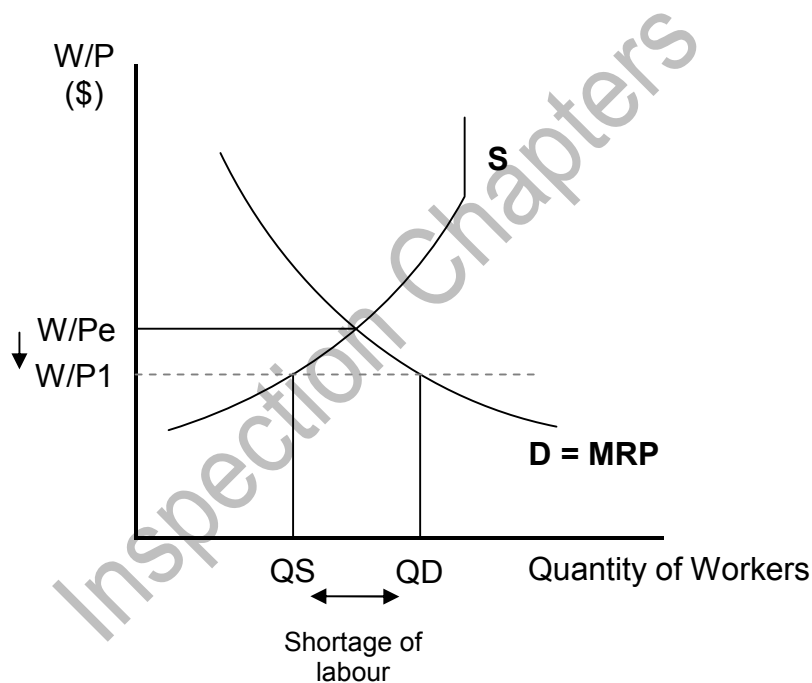
A government may intervene in the labour market to set a minimum wage. If the minimum wage is set above equilibrium the effect will be to create involuntary unemployment. Firms will employ less staff whereas more people will offer themselves for work. Involuntary unemployment are those people willing and able to work at the current wage rate but unable to find work.

**The Graph Below Shows the Effects of a Minimum Wage Set Above Equilibrium**

## The Effect of Unanticipated Inflation on the Labour Market

If workers and unions anticipate inflation they will try to negotiate higher wages to maintain their spending power. If unanticipated inflation occurs this will cause the real wage rate to fall below equilibrium as shown on the graph below. Firms will seek to employ more workers at the lower real wage rate. Some workers will not be willing to work at this wage rate. This will create a shortage of workers and eventually the real wage rate will tend back to equilibrium.

**Unanticipated Inflation and the Labour Market**



### Note:

Unanticipated inflation causes real wage rate to fall. This causes  $Q_S$  to decrease and  $Q_D$  to increase creating a shortage of workers. This will push the wage rate back up to equilibrium.

## **Why do some Kiwis Regard Australia as a Better Place to Live?**

In pure economic terms the average Australian worker earns about 30% more than their Kiwi counterpart. This difference in living standards is measured by a statistic called real GDP per capita. It measures the actual value of output of goods and services per person in a country.

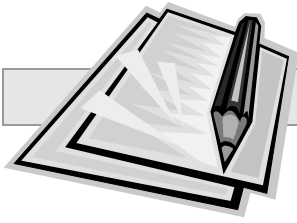
The reason for the difference in living standards comes back to marginal revenue product. The marginal revenue product of the average Australian worker is far higher. Marginal revenue product is a function of two things – the productivity of workers and the prices gained for the output produced.

The productivity of the average Australian workers is far higher and the reasons for this are varied. It is very doubtful that kiwi workers are lazier or less intelligent or educated. It is more probable that Australian workers have access to better capital goods and more capital per worker such as machinery, factories and infrastructure. It is also probable that the goods and services that they produce have greater value added and therefore command a higher price which generates higher incomes.

An understanding of the reasons for the difference in living standards is very important. It allows us to explore the ways in which the difference can be reduced.

## **Why do Tiger Woods and David Beckham earn so much more than most other professional players?**

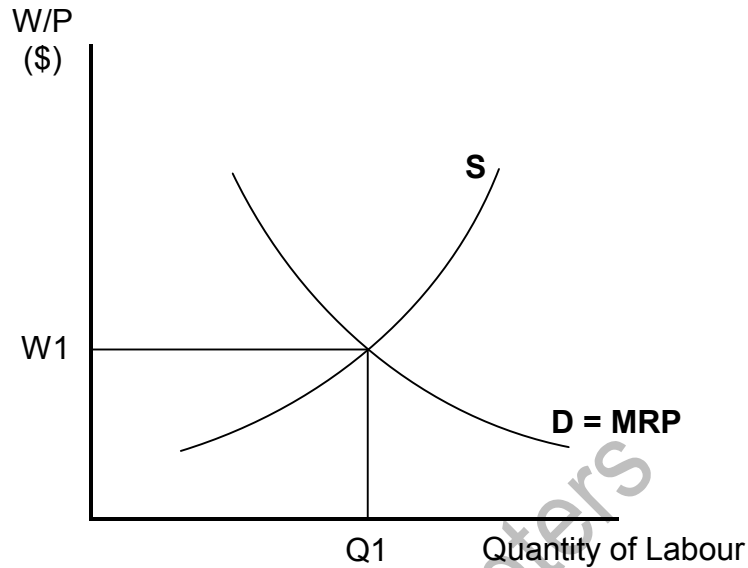
The reason is marginal revenue product. Neither Woods or Beckham play more tournaments or games than most other players however the difference in their incomes is enormous. Economist Stephen Franks explored the reasons in a book called “The Winner Takes All Society”. He explained why the very top sports stars are now earning so much more than other players compared to 20 years ago. The main reason is that their marginal revenue product is much greater. He called it the broadcasting effect. Changes in technology such as pay per view and satellite TV mean the extra revenue generated by the very top stars is much greater than in previous generations. Having Tiger Woods in a tournament generates far greater revenue because the potential audience is much larger.



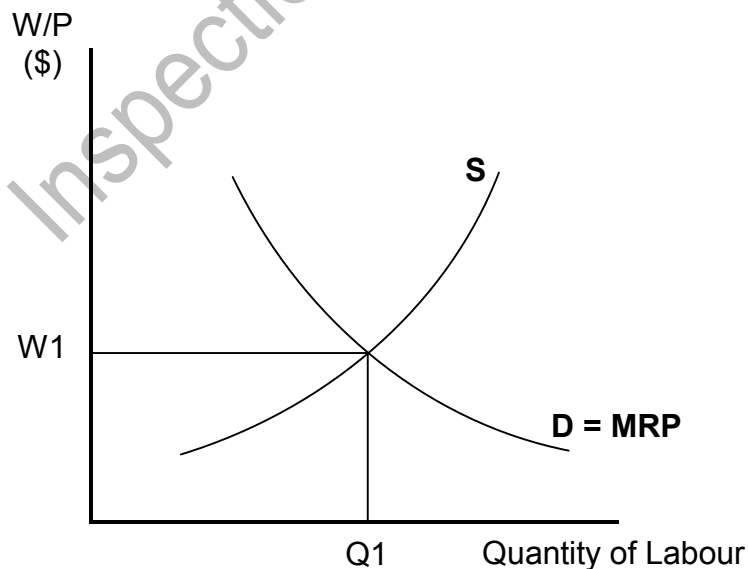
## Review Exercise

1. Complete the following glossary:
  - (a) \_\_\_\_\_ is the price of labour.
  - (b) \_\_\_\_\_ is the wage rate adjusted for inflation.
  - (c) \_\_\_\_\_ consists of those of working age who are willing and able to work.
  - (d) \_\_\_\_\_ are those in the labour force who are unwilling to work at the current wage rate.
  - (e) \_\_\_\_\_ are those in the labour force willing and able to work but unable to find work at the current wage rate.
  - (f) \_\_\_\_\_ is the extra output from employing one more worker.
  - (g) \_\_\_\_\_ is the extra revenue generated from employing one more worker.
  - (h) \_\_\_\_\_ is when a union negotiates on behalf of its members.

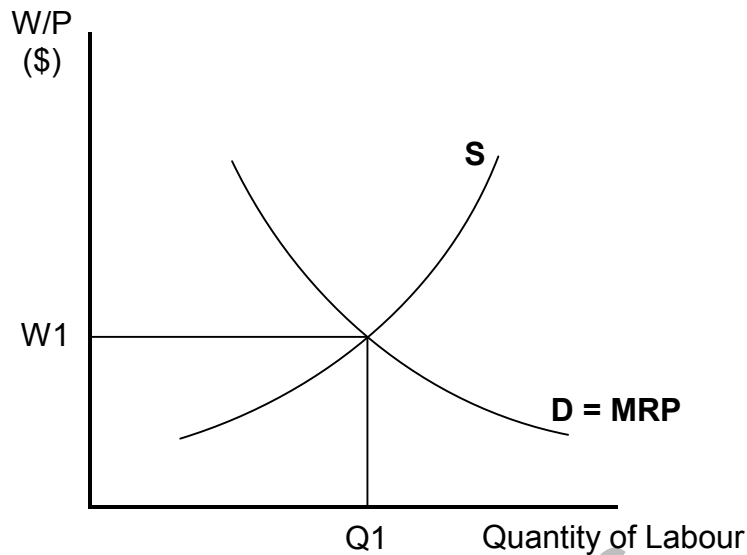
2. The graph below shows the market for building labourers in New Zealand. Show the effects of an increase in new housing construction on this market.



3. The graph below shows the market for chartered accountants in New Zealand. Show the effects of increased qualification requirements to become a chartered accountant.



4. The graph below shows the market for bus drivers.



- (a) Show clearly the effect of their union negotiating a pay rate above equilibrium – label the involuntary unemployment.
- (b) Explain how the new wage rate (above equilibrium) affects efficiency in the market.

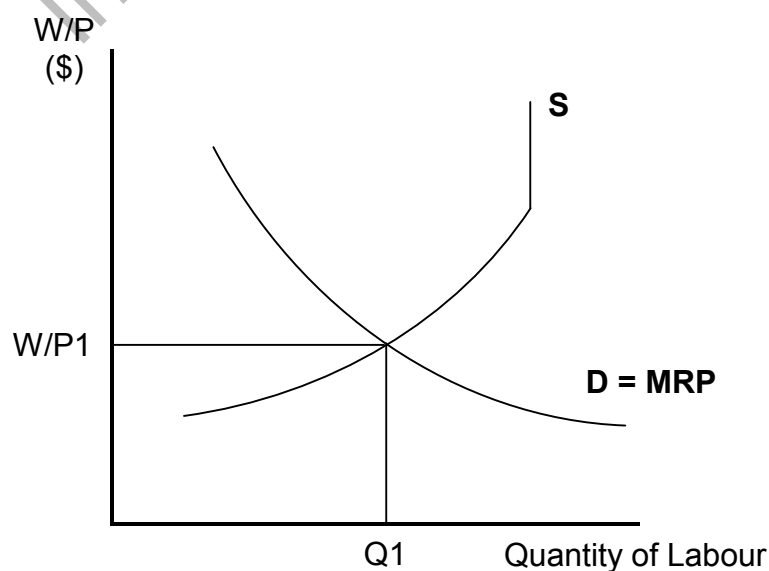
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5. Use the graph below to answer the following questions:

#### Labour Market in Utopia





- (a) Why does supply become vertical?

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- (b) Show on your graph the effect of unanticipated inflation on the market.

- (c) Explain how the market will return to equilibrium.

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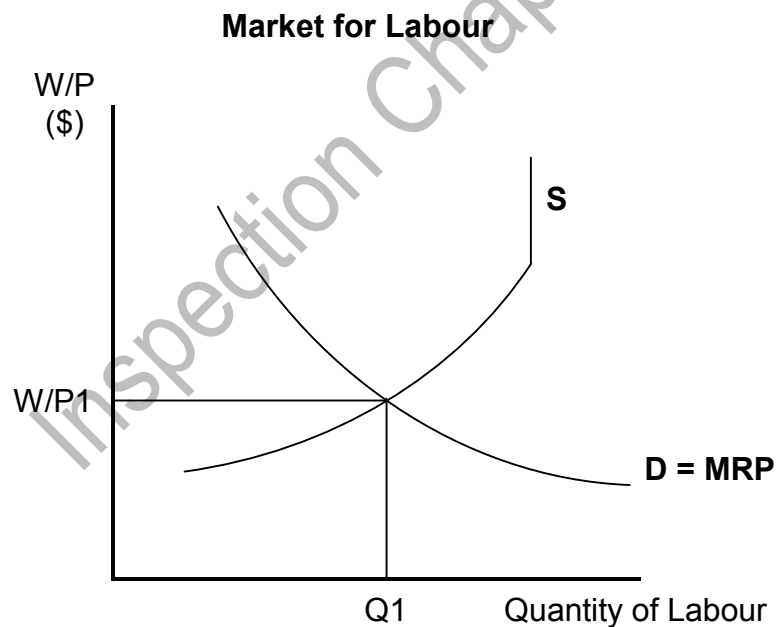


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6. Use the graph below to answer the following questions:



- (a) Show on your graph the impact of government setting a minimum wage above equilibrium.
- (b) Label the involuntary unemployment.

- (c) Why is it called involuntary unemployment?

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- (d) Explain the effects of a minimum wage above equilibrium on efficiency in the labour market.

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- (e) Show clearly on your graph the effect of an increase in world demand for dairy products.

- (f) What has happened to the level of unemployment in the economy?

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Inspection Chapters

## Practice Assessments for Achievement Standards 3.1 and 3.2

### Introduction

This section contains practice assessments for Achievement Standards 3.1 and 3.2. The nature of the questions are based on the exemplars provided by NZQA to meet the requirements of the revised standards for Level 3 Economics.

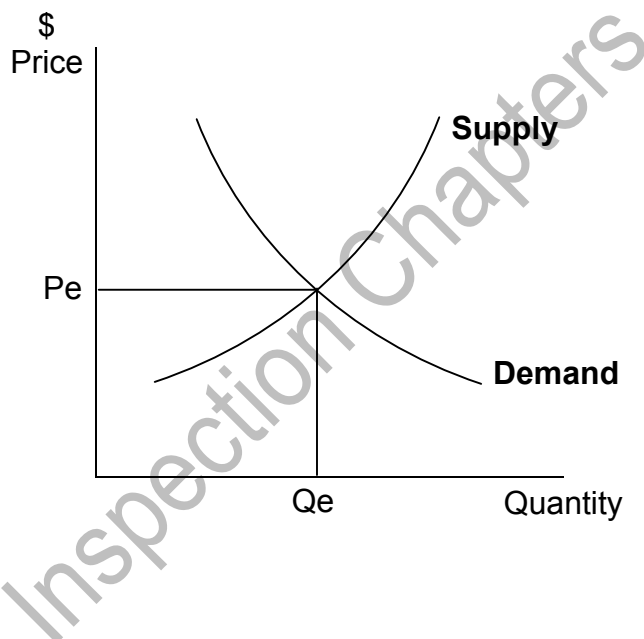
Inspection

## Practice Assessment 1 for Achievement Standard 3.1

### Demonstrate an Understanding of the Efficiency of Market Equilibrium

#### Question 1

##### The Market for Wine



1. Illustrate on your graph the effects of an excellent growing season for grapes. Label clearly the new equilibrium price and quantity.
2. Explain fully the market forces that move the market to the new equilibrium position.

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3. Explain how the new equilibrium represents an efficient use of resources.

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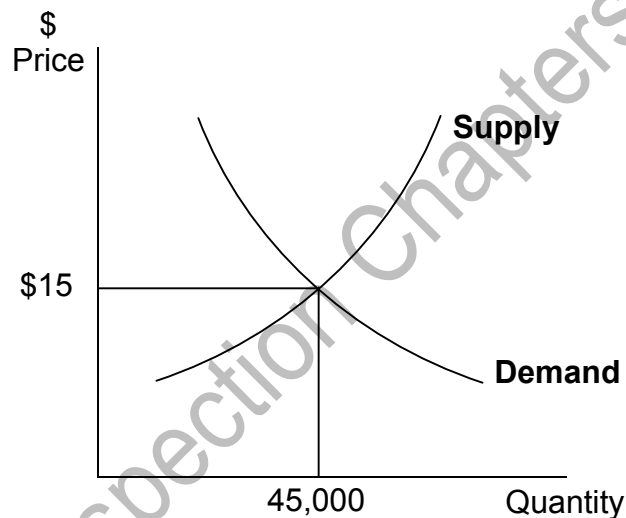
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4. On the market for bottles of wine below show the effects of a \$4 tax per bottle of wine that results in a new market price of \$18 and quantity of 40,000.

**The Market for Bottles of Wine**



5. Illustrate on your graph above the effects of this tax on efficiency in the market for bottles of wine.

6. Discuss the effects of the tax on wine on:

- Consumers and consumer surplus.
- Producers and producer surplus.
- Government.
- Efficiency in the market.

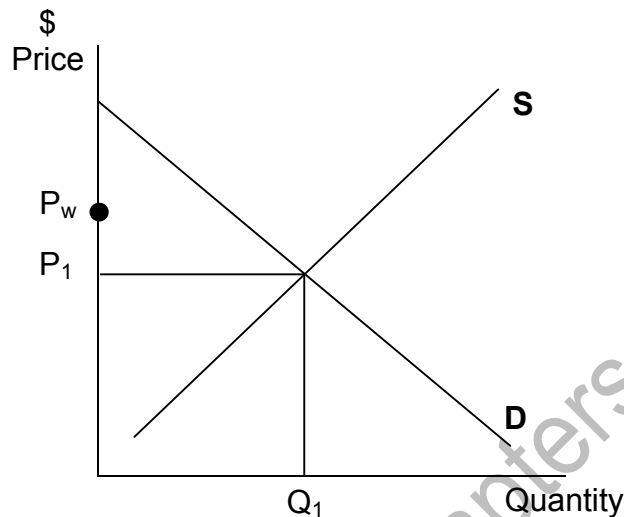
Inspection Chapters



## Question 2

### International Trade

#### The New Zealand Market for Milk



1. Show the effects of trade with the rest of the world on the New Zealand market for milk if world price is at  $P_w$ .

Clearly label:

Local consumption (QD).

Production (QS).

Exports (X).

2. Shade the New Zealand consumer surplus and producer surplus after trade with the rest of the world.
3. Discuss the effects of trade with the rest of the world on efficiency in the market for milk.

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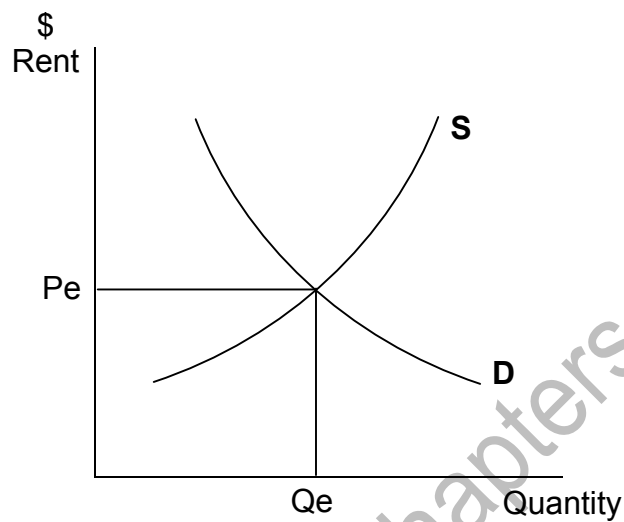
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4. If the Government considers setting a maximum price for milk for local consumers below the world price explain the possible effects on:
- Local consumers.
  - Producers.
  - Efficiency in the market.

Section Chapters

**Question 3****The Market for Two Bedroom  
Rental Properties in Christchurch**

1. Show the effects of the 2011 earthquake on the market for rental properties in Christchurch. Label the new equilibrium price and quantity.
2. Explain how market forces will shift the markets towards the new equilibrium.

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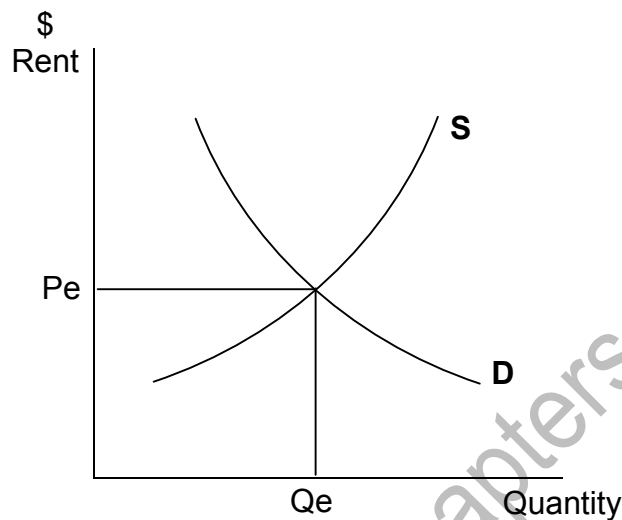
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3. Some commentators suggest the Government should use price controls to keep rentals affordable. Illustrate on the graph below the likely effect of a price control set below equilibrium on the rental market.

# The Market for Rental Properties in Christchurch

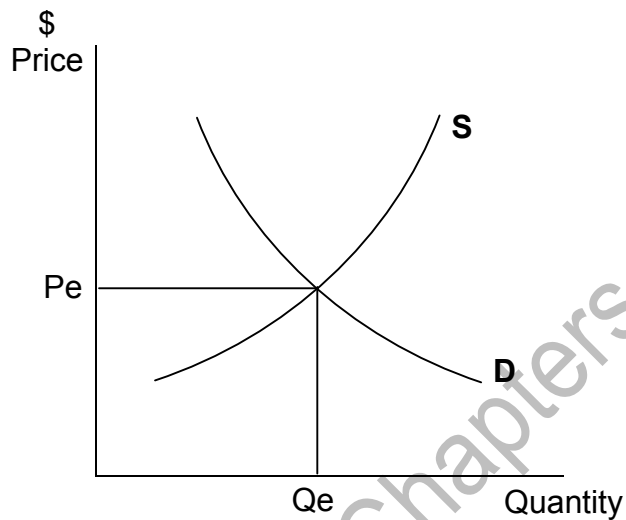


- Label on your graph the consumer surplus and producer surplus after the imposition of the price control.
- Explain how this price control would affect efficiency in the market for rentals. Label on your graph above the effect on efficiency.



6. The Government decides to subsidise landlords instead of using price controls. Illustrate the effects of a government subsidy for providers of rental accommodation in Christchurch on the graph below.

# The Market for Rental Properties in Christchurch



7. Compare and contrast the use of price control versus a subsidy on the rental market for accommodation in Christchurch.

Inspection

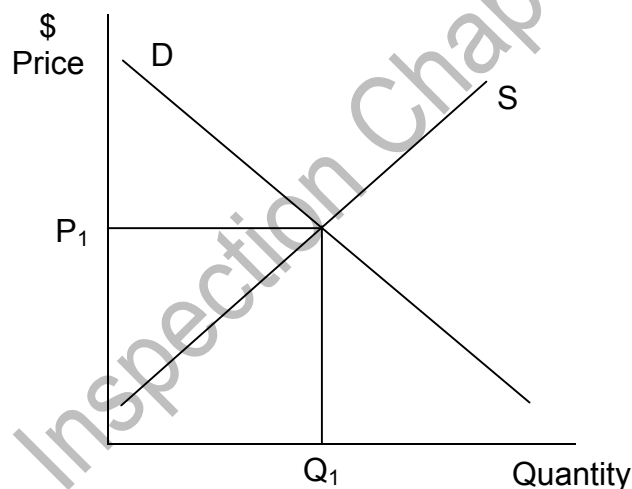
## Practice Assessment 2 for Achievement Standard 3.1

### Demonstrate an Understanding of the Efficiency of Market Equilibrium

#### Question 1

The retail market for electricity in New Zealand is the market between electricity companies and households and businesses. Much of New Zealand's electricity is generated by hydro dams which are reliant on water levels in lakes throughout the country to generate electricity.

**The Retail Market for Electricity in New Zealand**



1. Show the effects of a drought throughout New Zealand on the market for electricity. Label your changes clearly.
2. Fully explain the processes that moved the market to the new equilibrium.

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3. Explain how this new equilibrium represents an efficient outcome.

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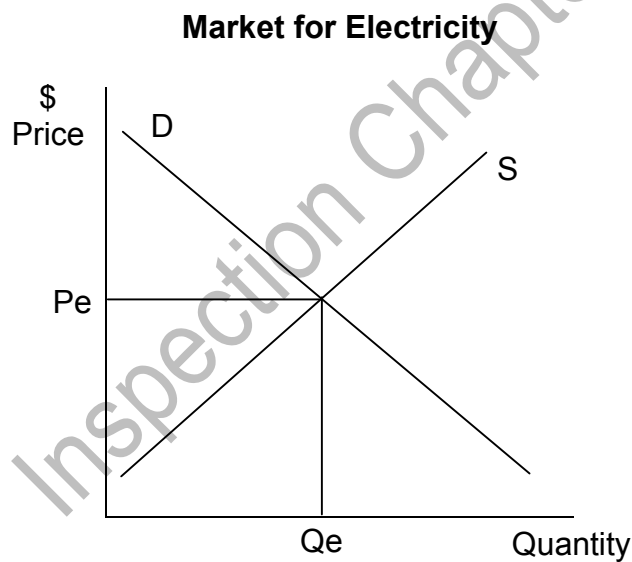
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4. The Government is concerned about the increases in electricity prices. It is considering imposing a maximum price for electricity below the new equilibrium.

On the axis below clearly label the effects of a maximum price set below equilibrium in the market for electricity.



5. Compare and contrast the effects of this maximum price for electricity on:
- (a) Consumers and consumer surplus.
  - (b) Producers and producer surplus.
  - (c) Efficiency in the electricity market.

Use a graph to illustrate your answers.

Inspection Chapters

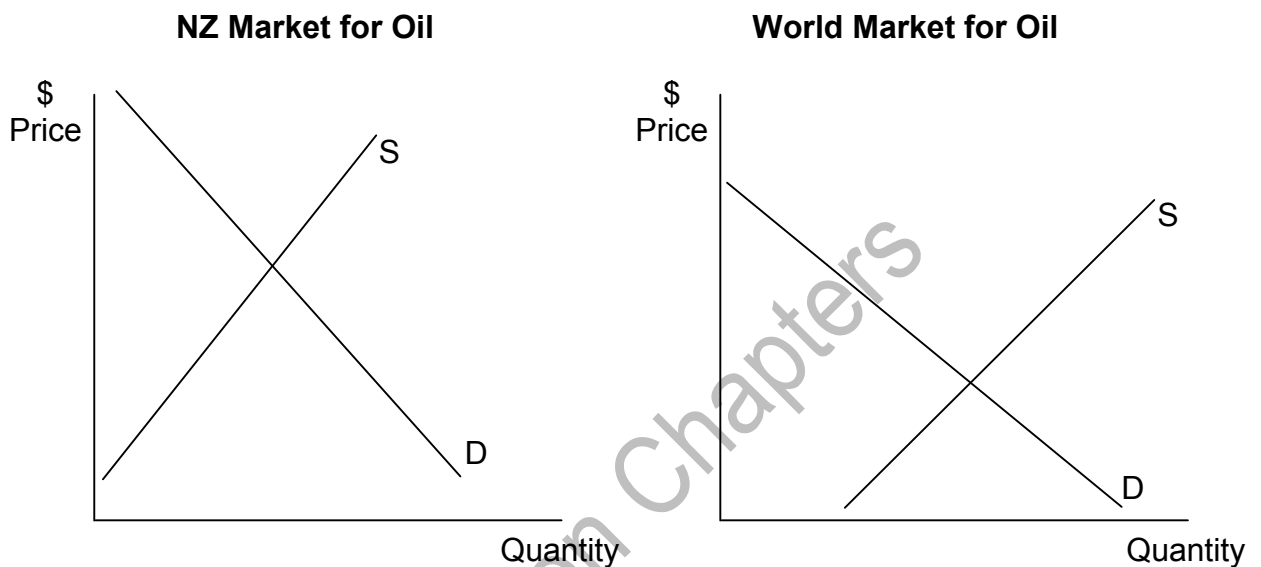




### Question 2

New Zealand is a net importer of oil and is a price taker on the world market.

1. Use the graphs below to illustrate the price that New Zealand pays for oil and clearly label the level of New Zealand imports of oil.



2. Explain why trade with the rest of the world improves efficiency in the market for oil in New Zealand.

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3. Rapid growth in developing economies such as China and India has had a major effect on the world market for oil in recent years.

Show the likely effect on the world market for oil and the New Zealand market for oil. Use the graphs in question 1.

Clearly label your changes.

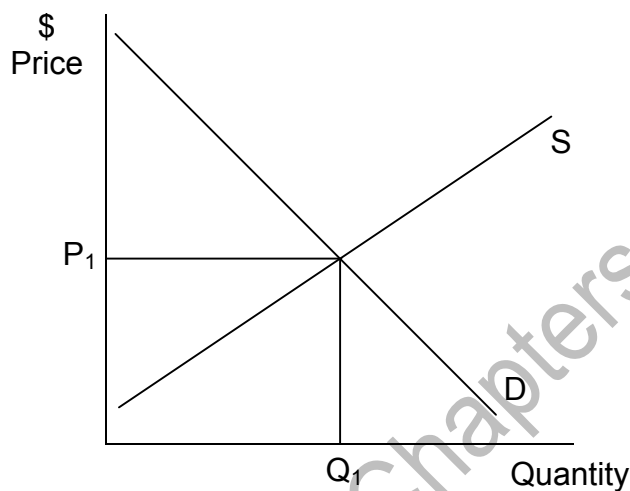
- Inspection Chapters



**Question 3**

Obesity and related illnesses are becoming a major health problem in New Zealand. There have been calls to increase taxes on unhealthy fatty foods.

**The Market for Family Size Pizzas**



1. On the market for pizzas above clearly show the effects of an increase in indirect tax on pizzas.

Label clearly:

- (a) Consumer surplus after tax.
- (b) Government revenue from the tax increase.

2. Fully explain how market forces move the market to the new equilibrium position.

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3. Explain how it could be argued that the increased tax on pizzas has led to a loss of efficiency in the market for pizzas.

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4. Critics of proposals to tax unhealthy food argue that such an approach is too random in determining which foods are to be taxed. They propose that advertising should be used to highlight the health risks of an unhealthy diet.

Compare and contrast the two possible approaches (taxation versus advertising) as a means of reducing unhealthy eating habits. In particular refer to the effects of each approach on:

- (a) Consumers.
- (b) Producers.
- (c) Government.

Use graphs where appropriate.

You can use the concept of elasticity in your answers.

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Handwriting practice lines with a diagonal watermark reading "Inspection Chapters".

Inspection Chapters

## Practice Assessment 1 for Achievement Standard 3.2

### Demonstrate an Understanding of the Efficiency of Different Market Structures Using Marginal Analysis

#### Question 1

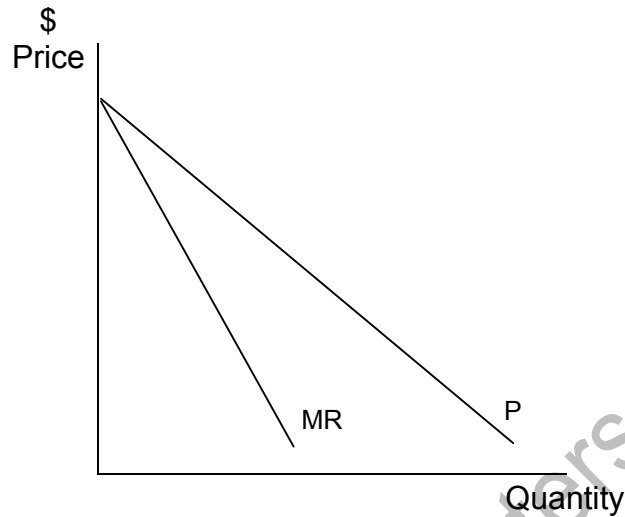
1. Classify the following features as either perfect competition or monopoly or both.

Characteristic	Market
One seller	Monopoly
Many sellers	Perfect competition
Firms have no market power	
No barriers to entry	
Firms use product differentiation	
Super, normal or subnormal profits in the short run	
Price = marginal cost for firms	
Firms maximise profit where $MR=MC$	
Firms can make supernormal profit in the long run	
Firms are efficient	
Consumers are sovereign	
High market concentration	
Firms have market power	
Firms can control output	
Firms produce at least possible cost	
Firms reduce price to sell more output	



2. There is only one petrol station in the small town of Kurow. It is called Porteous Motors.

**Porteous Motors**



- (a) Complete the graph to show the likely profit situation for Porteous Motors. Label Price ( $P_m$ ) and Quantity ( $Q_m$ ).
- (b) Label the price and quantity that would occur if the petrol market was competitive in Kurow ( $P_c$ ,  $Q_c$ ).
- (c) Explain why the market for petrol in Kurow would not be regarded as efficient.

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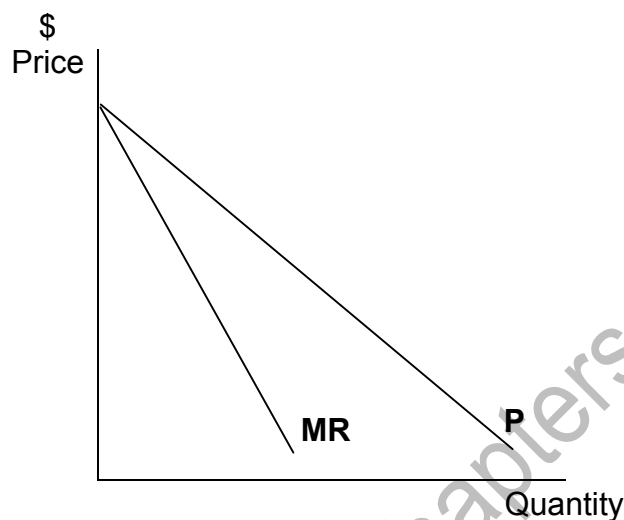
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- (d) There is an increase in the world price of oil which is refined to produce petrol. Show on the axis below the likely impact on the equilibrium for Porteous Motors. Label the new equilibrium for the firm ( $P_2$ ,  $Q_2$ ).

### Porteous Motors



- (e) Use marginal analysis to explain how the firm has responded to the change.

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- (f) Explain the possible differences in the market for petrol in Kurow with the market for petrol in Auckland.

Include in your explanation:

- The likely profit situations for firms in both markets.
- Efficiency in both markets.

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Inspection Chapters

**Question 2**

1. Chorus owns and operates the copper phone lines throughout New Zealand. Chorus is a natural monopoly in this market.

- (a) State 3 features of a natural monopoly.

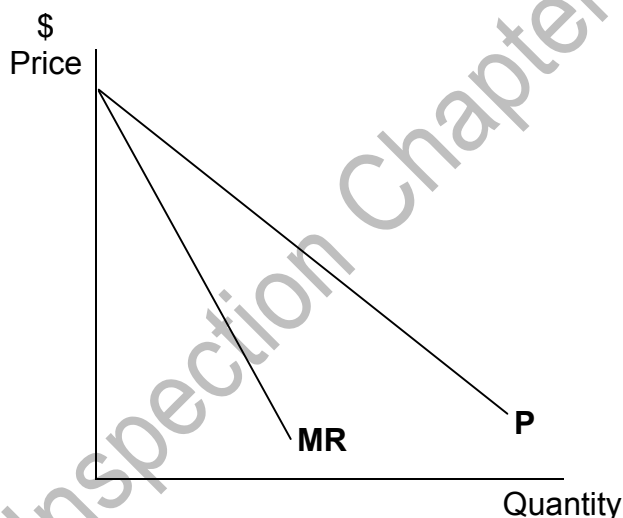
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- (b) Complete the graph for Chorus below. Label the equilibrium price and quantity for the firm ( $P_1$ ,  $Q_1$ ).

**Profit Situation for Chorus**



- (c) Explain the shape of the cost curves for the firm.

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- (d) Discuss the efficiency in the market for phone lines.

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- (e) The Commerce Commission is considering using price controls to reduce the loss of efficiency.
- (i) Label on your graph the price and quantity ( $P_c$ ,  $Q_c$ ) that the Commission could set to force Chorus to act as though it is in a competitive market.
- (ii) Evaluate the effectiveness of using this price control to force Chorus to achieve a more efficient outcome.

Inspection Chapters

### Question 3

1. The market for onions could be regarded as perfectly competitive. Many onion growers are market gardeners on the outskirts of cities. The land they use is becoming increasingly valuable for use for housing.

- (a) State three features of this market that could indicate that it is perfectly competitive.

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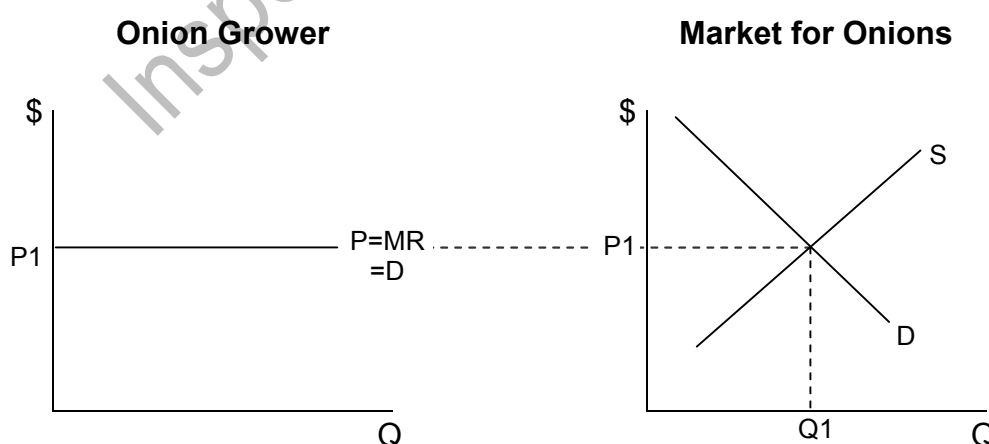
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- (b) State a possible feature of this market that is not a feature of perfect competition.

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- (c) The graphs below are for an individual grower and the market for onions. Assume the grower and market are at equilibrium with growers making normal profits.

Complete the graphs. Label price and quantity carefully on both graphs.



- (d) There is a significant increase in the cost of fertilisers.

Show on the graph for the **individual grower** the effects of this change.

[illegible]

- (f) Explain and illustrate on the previous graphs the likely long run changes in the market and how this will impact on growers who remain in the market.

Inspection

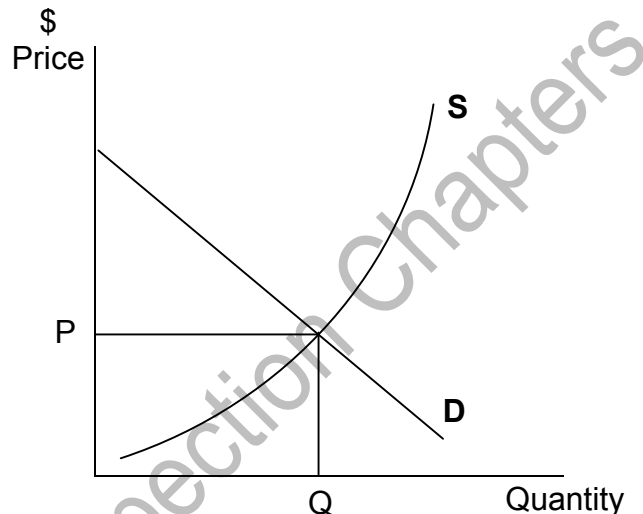
- (g) The market for onions is currently a competitive market. Eventually one grower takes over the other growers in the market and establishes a monopoly for onions.

Illustrate and discuss the effects of this change on:

- Price and quantity.
- Consumer surplus.
- Producer surplus.
- Efficiency in the market.

### Market for Onions

(from a competitive market to a monopoly)



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## Practice Assessment 2 for Achievement Standard 3.2

### Demonstrate an Understanding of the Efficiency of Different Market Structures Using Marginal Analysis

#### Question 1

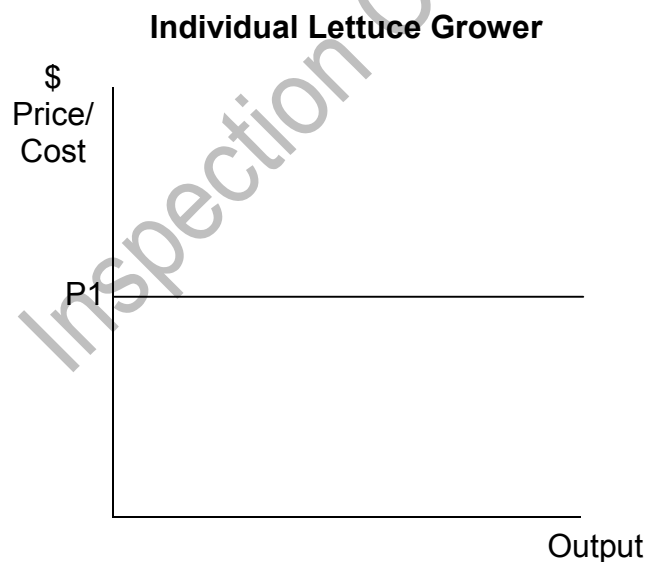
1. The market for lettuces in a small economy called Zealandia is regarded as perfect competition. State three main characteristics of this type of market structure.

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2. The lettuce farmers in Zealandia are making normal profits. Show on the axis below the situation for an individual lettuce grower in Zealandia. Label price and quantity ( $P_1$ ,  $Q_1$ )



3. A study shows major health benefits of consuming lettuces. On the graph above show the likely effects of this change on the price and quantity produced by the individual lettuce grower. Label the new price and quantity ( $P_2$ ,  $Q_2$ ).

4. Use marginal analysis to explain the changes that you have drawn for the individual grower.

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5. Lettuce growers are now making supernormal profits. Use your understanding of perfect competition to explain why this situation is unlikely to continue in the long run.

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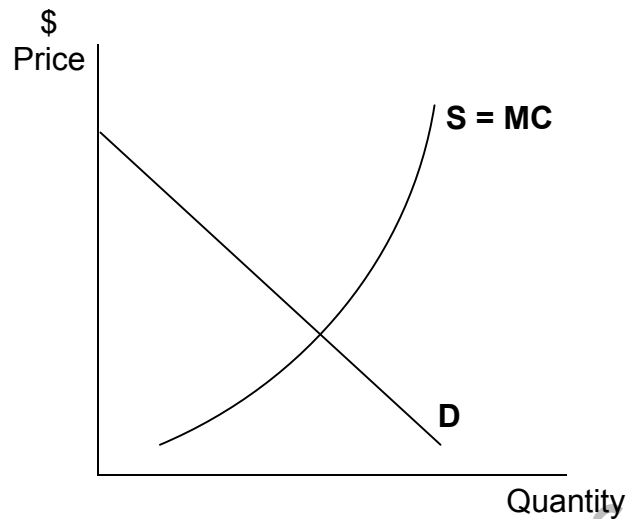
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6. A wealthy investor takes over the many lettuce farms in Zealandia. This creates a monopoly in lettuce production.

- (a) On the market for lettuces following, show the effects of a competitive market for lettuces becoming a monopoly by drawing the relevant curves.
- (b) Clearly identify the monopoly output and price ( $P_m$ ,  $Q_m$ ) compared to the competitive market ( $P_c$ ,  $Q_c$ ).

### The Market for Lettuces in Zealandia



7. Compare and contrast the efficiency of a competitive market for lettuces with the monopoly market for lettuces.

You must refer to:

- The characteristics of both types of market structures.
- The pricing and output of firms in both market types.
- The efficiency of firms in both market structures.

You should include graphs of perfect competition and monopoly to illustrate your answers.

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Inspection Chapters

**Question 2**

1. Chorus is a company that operates the copper phone lines that are also used to deliver internet services to many households in New Zealand. Chorus is also rolling out the fibre optic cabling that will provide ultra fast broadband to households in New Zealand. Chorus sells access to these lines to retail internet providers. Chorus is regarded as a natural monopoly.

**Explain** a key feature of a natural monopoly.

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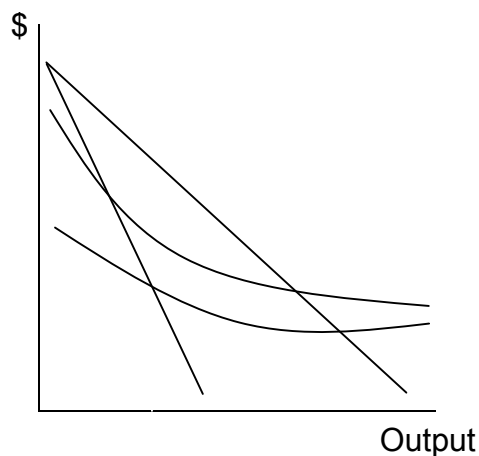
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2. The axis below shows the market for access to copper phone lines provided by Chorus.
- (a) Label the curves.
  - (b) Label the efficient (competitive) price and quantity ( $P_e$ ,  $Q_e$ ).
  - (c) Label the price and quantity likely to be provided by Chorus ( $P_c$ ,  $Q_c$ ).
  - (d) Shade the loss of efficiency.

**Chorus Revenue and Costs**



3. Use marginal analysis to explain why Chorus will produce at an output below what is regarded as efficient.

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4. The Commerce Commission has recommended using price controls to ensure a more efficient outcome in the market for access to copper phone lines.

There is strong feeling in the telecommunications sector that price controls should be used to ensure that Chorus cannot abuse its market power and should be restricted to making a normal return.

- (a) Compare and contrast the pricing and output decisions of Chorus with what would occur in a competitive market.
- (b) Explain the possible pricing options that the Commerce Commission could set for Chorus.
- (c) Evaluate the effectiveness of using these price controls to improve efficiency in the market.

Use appropriate graph(s) in the your answer.

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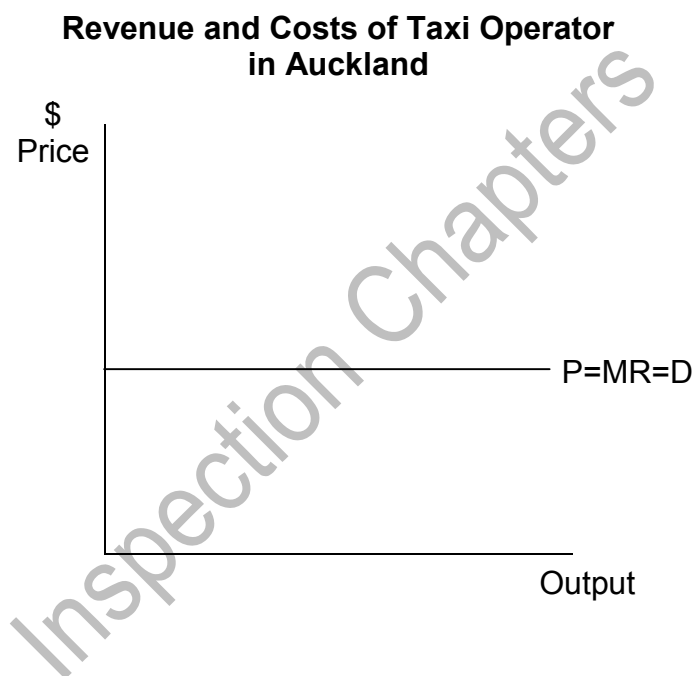


Inspection Chapters



**Question 3**

1. The diagram below shows the revenue and cost curves for a taxi operator in Auckland.
  - (a) Draw the average cost curve and marginal cost curve for a taxi operator in this competitive market making normal profits.
  - (b) Label the price/costs and output of the taxi operator ( $P_1$ ,  $Q_1$ ).



2. Show on the axis above the effects of an increase in fuel prices on the output decisions of a taxi operator.
3. Use marginal analysis to explain how the taxi operator will respond to this change in the short run.

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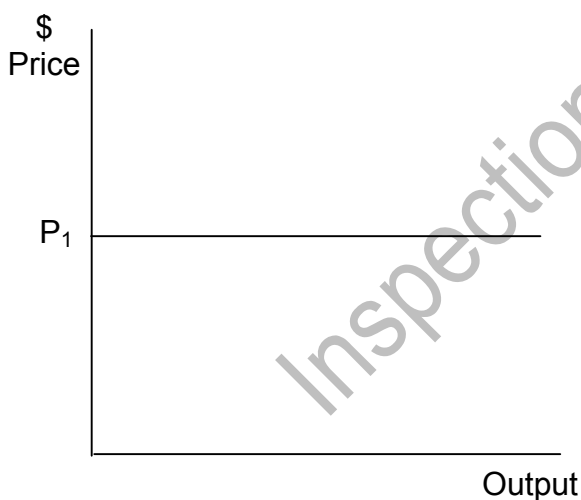
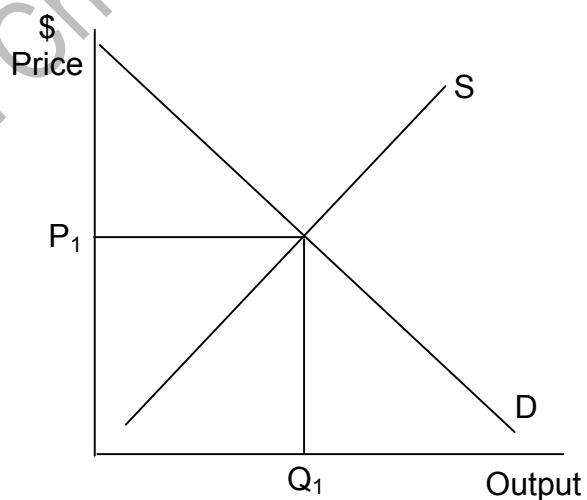
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4. The taxi operator is now making a subnormal profit in the short run. Compare and contrast the likely short run and long run situations for the taxi operator and the Auckland market for taxi services.
- (a) Use the axes below to show the short run and long run situations for the individual taxi operator (currently making sub normal profit) and the entire market for taxi services.
  - (b) Give a full explanation of the process from short run to long run for the individual taxi operator and the entire market.
  - (c) Compare and contrast the pricing and output for the individual operator and for the entire market in the long run.

**Individual Taxi Operator****Market for Taxi Services**

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- (d) On your diagram show the likely impact of an increase in petrol prices on the price and output decision of the firm ( $P_2$ ,  $Q_2$ ).

Inspection Chapters