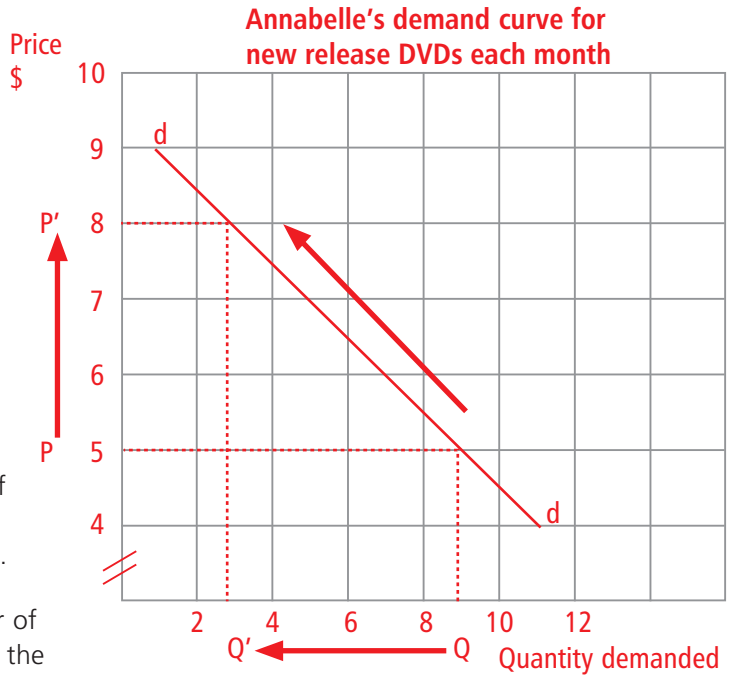
Contents

QUESTIONS & TASKS

1 **a** Draw up the demand curve of the schedule below.

Annabelle's demand schedule for new release DVDs each month	
Price ($)	**Quantity Demanded**
4	11
5	9
6	7
7	5
8	3
9	1



b **(i)** On your graph, show the effect of the price of DVDs increasing from $5 to $8. Fully label your changes.

(ii) Identify the change in the number of DVDs that Annabelle will buy and the change in the value of her spending.

As the price of DVDs per month increases from $5 (P) to $8 (P') the quantity demanded by Annabelle falls from 9 (Q) to 3 (Q') (i.e., she buys 6 less DVDs). The value of her spending on DVDs falls from $45 ($9 x 5) to $24 ($8 x 3).

(iii) Explain, with reasons, why the quantity of DVDs demanded by Annabelle changes when the price of DVDs increases.

AS the price of DVDs increases Annabelle can not afford as many DVDs with her limited income, and she will look to buy a relatively cheaper activity to do.

(iv) Explain a flow-on effect this change will have for Annabelle.

Annabelle may decide to watch more TV or go to the movies (a substitute good which is relatively cheaper) more often. Annabelle may take more care in selecting the DVDs she buys to ensure they are better quality (worth watching idea).

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4 Price and quantity supplied have a direct relationship.

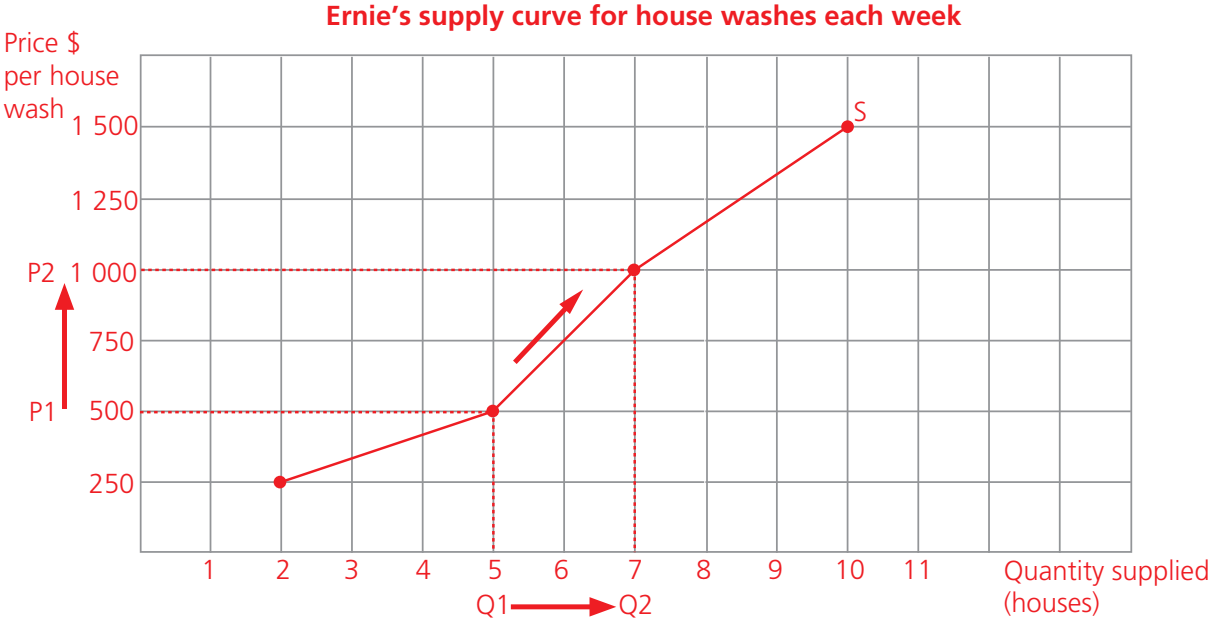
Explain the relationship between price and quantity supplied. In your answer you should:

- draw a supply curve using the schedule opposite and the grid provided
- show a price increase from $500 per house to $1 000 per house
- describe the law of supply by referring to the graph provided
- explain the concept of ceteris paribus in the context of the law of supply
- explain a reason for the law of supply
- explain a flow-on effect this change in supply may have on Ernie's resource use.

Ernie's supply schedule for house washes each week

Price ($) per house	Quantity supplied (houses)
250	2
500	5
1 000	7
1 500	10

Ernie's supply curve for house washes each week



The law of supply states – as price inreases the quantity supplied increases, ceteris paribus. Ceteris peribus assumes that all other factors (costs of production, productivity, indirect taxes and weather) remain the same or unchanged. Therefore, the price change only determines the change in quantity supplied.

As the price of house washes increases from $500 (P1) to $1 000 (P2) the quantity supplied increases from 5 (Q) to 7 (Q') house washes per week. As the price of house washes increases, Ernie is more able to cover costs since the revenue is higher it becomes more profitable for Ernie because the difference between costs and revenue is greater.

A flow-on effect for Ernie of more houses being washed is that his need for resources will be greater. He may have to employ an additional worker or pay an existing worker overtime. As he washes more houses he may need extra equipment such as hoses, ladders or scaffolding, which he may hire or buy.

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9 MARKET EQUILIBRIUM
Basics

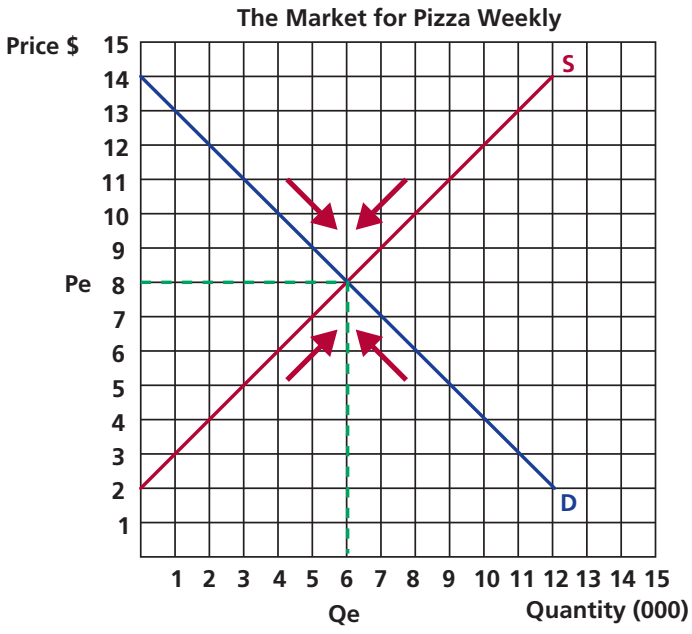
Establishing market equilibrium

Market for Pizza Weekly				
Price $	Quantity Demanded	Quantity Supplied	Market Situation	Pressure on Price
14	0	12000	Surplus 12000	Downward
12	2000	10000	Surplus 8000	Downward
10	4000	8000	Surplus 4000	Downward
8	6000	6000	Equilibrium	None/Stable
6	8000	4000	Shortage 4000	Upward
4	10000	2000	Shortage 8000	Upward
2	12000	0	Shortage 12000	Upward

Equilibrium is a term to denote a balance between forces involved. The **equilibrium price and equilibrium quantity** in a market is determined by the interaction of the forces of demand and supply. Equilibrium in a market is the price at which the quantity demanded by consumers equals the quantity supplied by producers. At the equilibrium, both parties involved in the market are completely satisfied, with consumers having purchased all they want to buy, and producers having sold all they want to sell.

At the market equilibrium the **market will clear** and there will be neither a surplus (excess supply) or a shortage (excess demand). Therefore, all stock is sold (i.e., no stock is unsold) and consumers do not want to buy any more of the good or service. As long as the conditions of demand and conditions of supply remain unchanged (ceteris paribus) then the equilibrium price and equilibrium quantity will remain unchanged.

On a schedule the equilibrium can be found where the quantity demanded by consumers and the quantity supplied by producers are equal at one particular price.



On the diagram, the equilibrium price for pizza is $8 (Pe) and the equilibrium quantity for pizza is 6 000 (Qe) because this is where the demand curve and the supply curve intersect, with the quantity demanded by consumers equal to the quantity supplied by firms.

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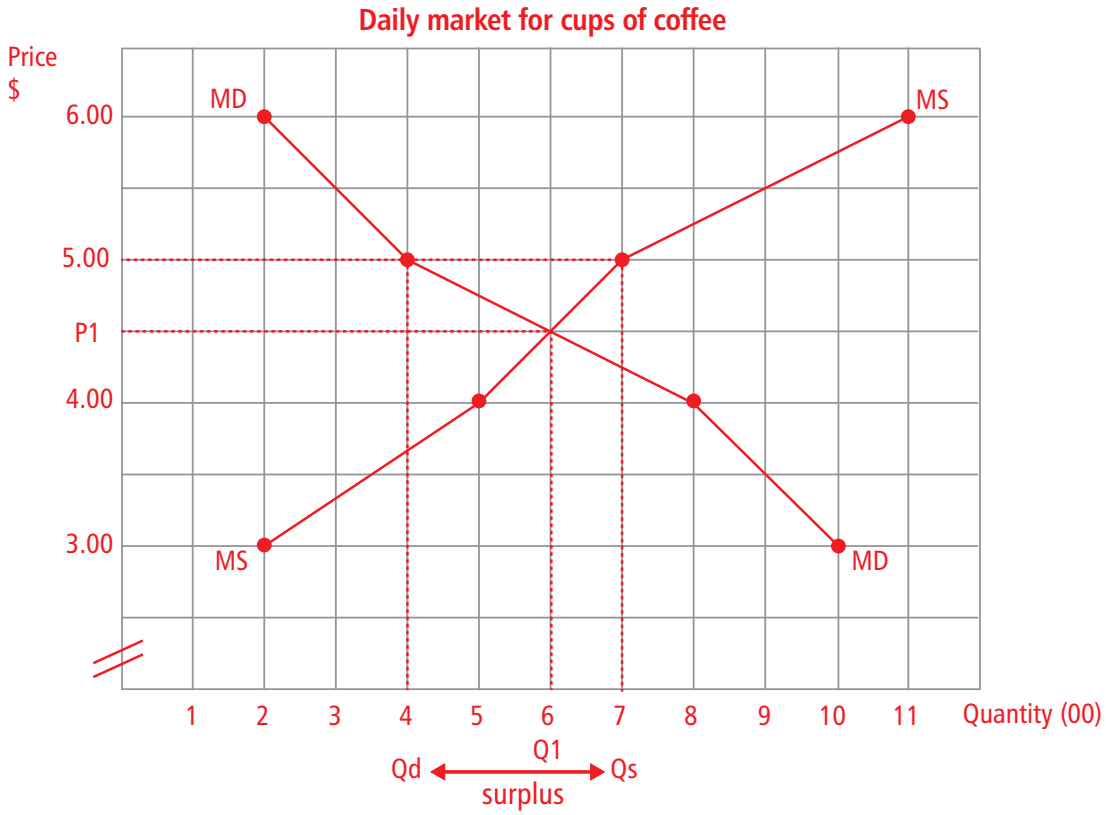
The demand and supply of coffee is given below.
At $3 a cup the market demand is 1 000 per day. At $4 individuals buy 800.
At $5 market demand is 400, while at $6 consumers purchase 200 cups.

Market supply schedule for coffee daily	
Price $	**Market supply**
6	1 100
5	700
4	500
3	200

4 **a** On the graph below plot the market for coffee daily. Use dotted lines to show the market equilibrium price (P1) and quantity (Q1).



b On the graph you drew above, show the market situation if the price of a cup of coffee was $5.00. You must use dotted lines to show the quantity demanded (label this Qd) and the quantity supplied (label this Qs). Label the resulting shortage or surplus.

c Discuss how the market would react to this situation. In your answer you should explain the change in the market price, the change in quantity demanded and quantity supplied. Refer to the data given.

At $5.00 per cup of coffee there is a surplus of 300 cups because the quantity supplied by firms Qs (700) is greater than the quantity demanded by consumers Qd (400).

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11 SALES TAX AND THE MARKET

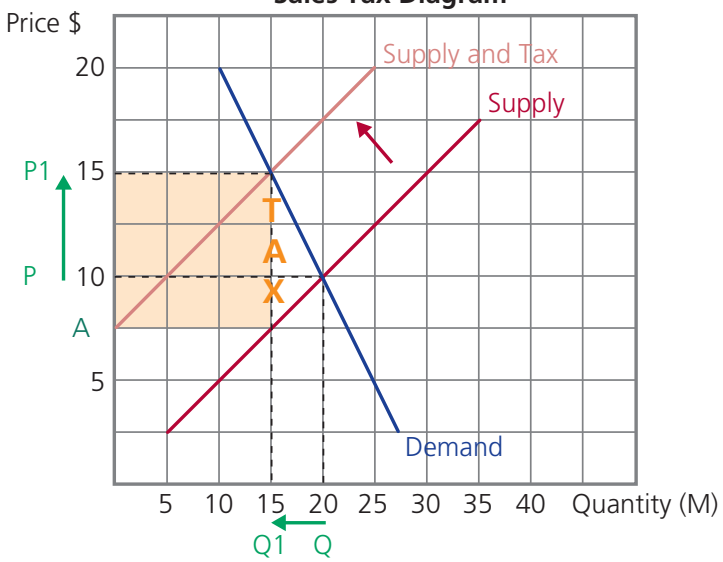
Sales tax and the market

An **indirect tax** (such as sales tax or VAT) is a tax collected by firms (a third party) and then passed on to the government. An indirect tax will decrease supply causing the equilibrium price to rise and equilibrium quantity to decrease. The advantages of a sales tax is that it decreases equilibrium quantity and the government raises revenue.

Illustrating a sales tax

To **illustrate the effects of a per unit (dollar) sales** tax requires shifting the original supply curve upward to the left by the per unit tax amount. For example, if the per unit tax is $7.50 and $7.50 equates to 3 spaces on the graph, you must shift the entire supply curve vertically upwards by this distance. It is important to note that the increase in the price will not be as much as the amount of the tax because the curves are sloping. Therefore, the producer is able to pass some of the tax on to the consumer.

Sales Tax Diagram



The tax per unit is the gap between the supply curves. Note the price does not rise by the full amount of the tax per unit. In this case the tax per unit is $7.50 but the price has gone up by $5.

P is the original price and **Q** is the original quantity

P1 is the new price and **Q1** is the new quantity

A is the price per item firms receive with an indirect tax

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The impact of a sales tax worked example

	Before the tax	After the tax
Quantity sold	Q, 20m	Q1, 15m
Price consumers pay	P, $10	P1, $15
Consumer spending	P x Q, $200m	P1 x Q1, $225m
Price producers receive	P, $10	A, $7.50
Producer revenue	P x Q, $200m	A x Q1, $112.5m
Change in the value of sales	(P x Q) difference (P1 x Q1). An increase of $25m	
Change in producers' revenue	(P x Q) difference (A x Q1). A decrease of $87.5m	
How much is the tax per unit?	The size of the gap between the supply curves. $7.50	
Government revenue from the tax	Tax per unit x Q1. $7.50 x 15m = $112.5m	

The **incidence of a tax** refers to who actually pays the tax. In most cases, part of a tax is paid by the consumer and part is paid by the firm. **Consumers** pay to the extent of the price rise from the original price paid (P) to the new price paid (P1). Any amount of the tax not covered by the price increase has to be absorbed by the firm (from P to A on the diagram opposite).

The change in the value of consumer spending that results from the tax equals the difference between the original price a consumer pays (P) multiplied by the original quantity purchased (Q) and the new price paid (P1) multiplied by the new quantity purchased (Q1). Since a tax results in a price increase there will be a decrease in quantity demanded because fewer consumers are willing and able to purchase with their limited incomes.

The value of consumer spending may remain unchanged, decrease or increase because the new value of consumer spending depends on the relative changes in both the new price paid and the new quantity purchased. Consumers may look to buy a substitute good or service that is relatively cheaper.

Producers will find that the tax adds to their costs so they will decrease supply, meaning that there will be a decrease in quantity supplied at each and every price. The firm will collect the tax revenue and pass this onto the government. Therefore, the price per item firms receive with a tax will be lower than the price consumers pay for them.

To identify how much producers earn per item for the product at the new equilibrium you track down from the new equilibrium position until you hit the original supply curve, this gives the price per item firms receive with a tax (shown on the diagram as the letter A).

The change in the firm's income or revenue will be the difference between the firm's original income, which was the original price (P) received multiplied by the original quantity (Q) and the new value of the firm's income, which equals the price per item the firm now receives (A) multiplied by the new quantity sold (Q1).The producer's total income with the sales tax will fall because the price per item that the firm receives will be lower and the quantity sold will fall.

The revenue that the **government** collects from the tax equals the tax per unit multiplied by the new quantity (tax per unit x Q1). The tax revenue that the government collects is most likely to be used in a variety of different ways.

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