

d Calculate the quantity of excess supply at a price of \$30 per unit.

[2]

1.2 Elasticity

Price elasticity of demand (PED)

1 Juke Ltd. sells 200 units of its product each day at a price of \$4, with a known price elasticity of demand of -2.0 .

a Calculate Juke Ltd.'s sales revenue.

[2]

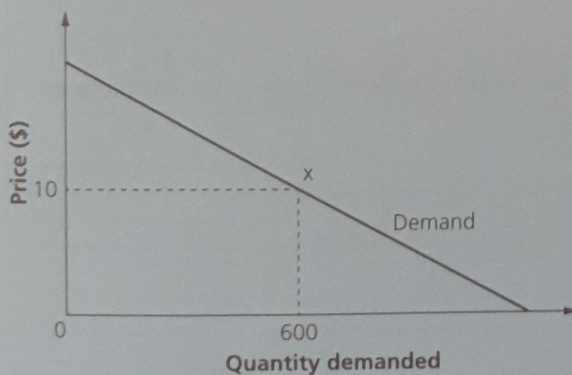
b Calculate the new sales revenue if Juke Ltd. increases its price by 20%.

[3]

c Explain whether raising its price was a good decision for Juke Ltd.

[2]

2 In the diagram below, Point x represents the mid-point of the demand curve.



a State the value of the price elasticity of demand at Point x.

[1]

b Explain what will happen to total revenue if the price falls below \$10.

[2]

3 From the data below for a given product, comment on the value of the price elasticity of demand for the product.

[3]

Unit price (€)	15	25	40
Sales revenue (€)	300	500	800

4 Suppose the demand for a good is given by the function $Q_d = 400 - 25P$.

a Calculate the price elasticity of demand (PED) for the good if the price increases from \$4 to \$5 and then from \$10 to \$11.

[3]

b Using your answer to Question 4a, explain what happens to the value of the PED for a good with a linear demand function as the price of the good increases.

[2]

c If the value of the $PED = -1$, explain what the effect will be on the firm's total revenue if it reduces price by 5%.

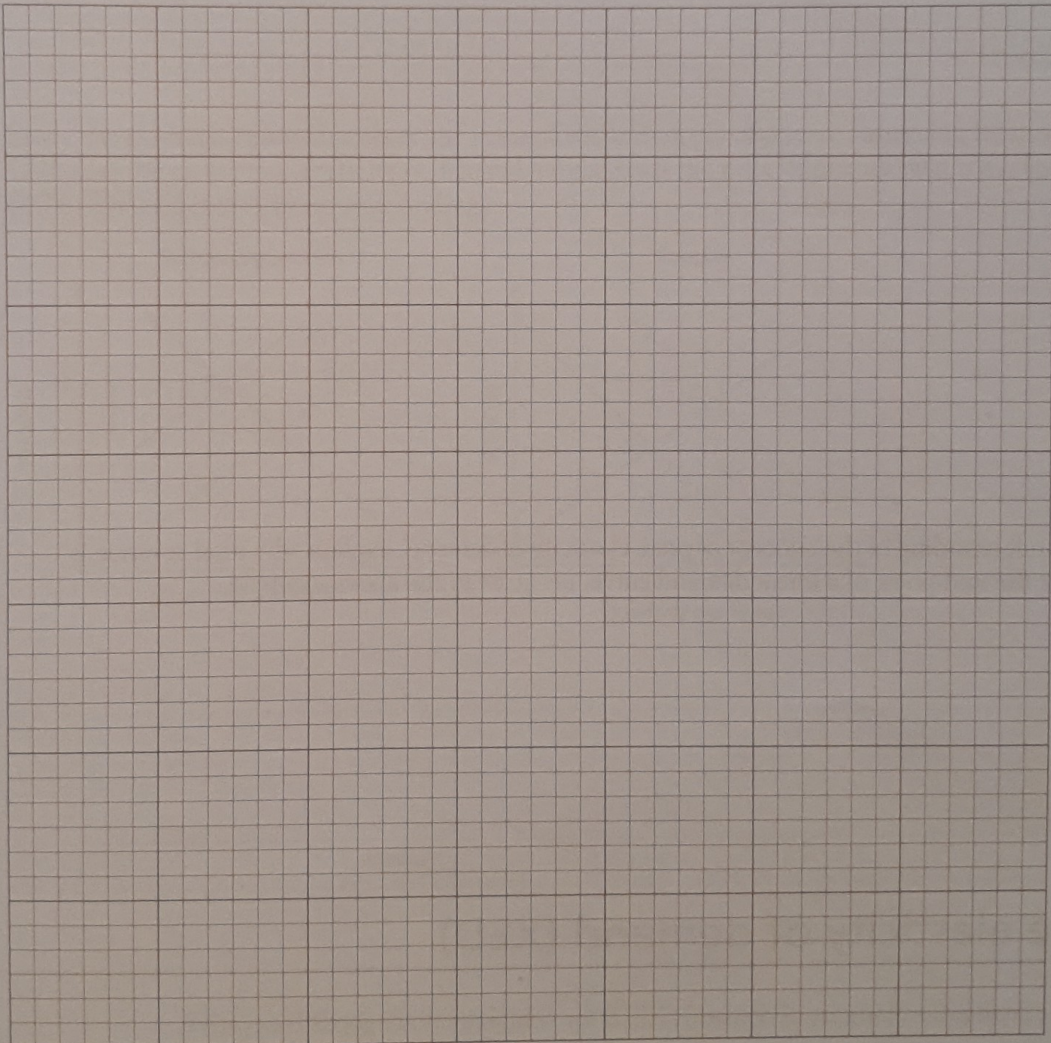
[2]

5 Study the demand schedule below and answer the questions that follow.

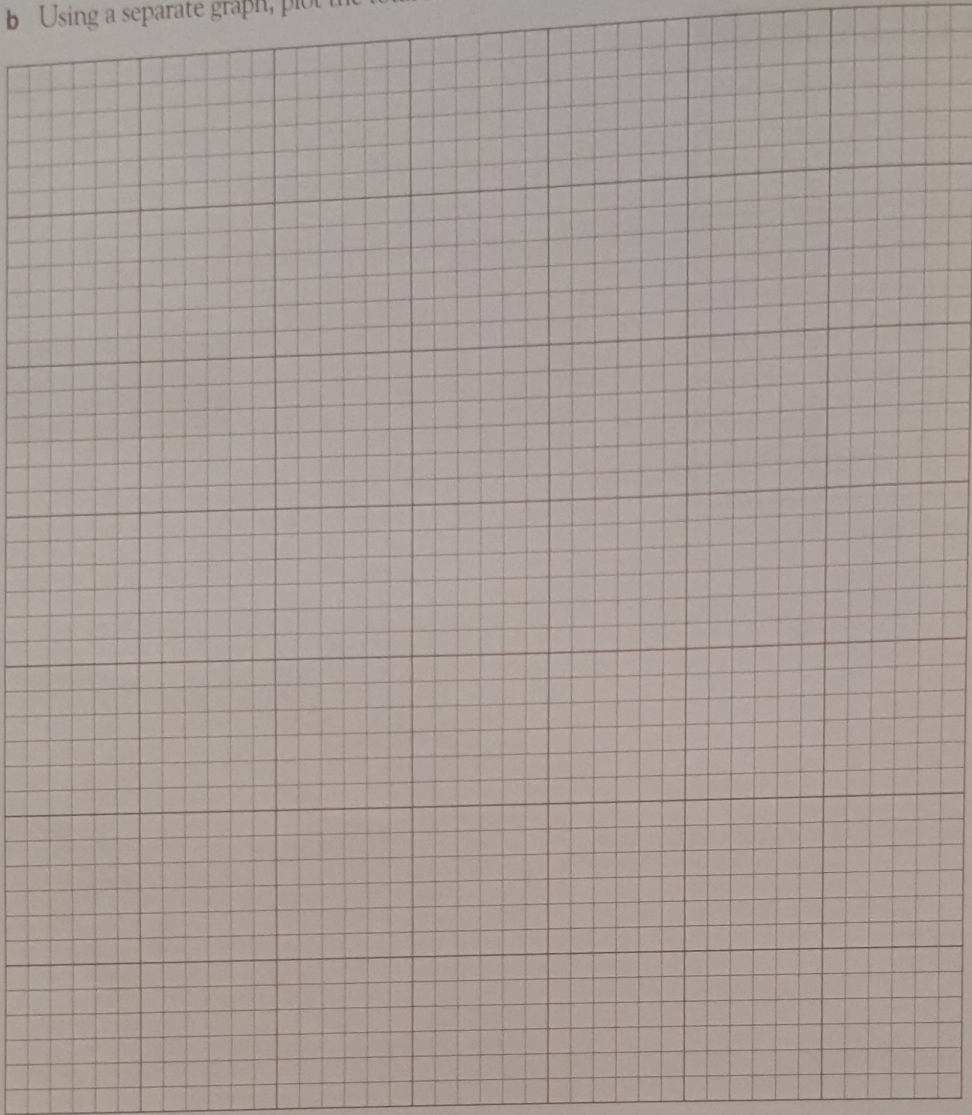
Price per unit (\$)	Quantity demanded
10	0
9	1
8	2
7	3
6	4
5	5
4	6
3	7
2	8
1	9
0	10

a Plot the demand curve.

[3]



b Using a separate graph, plot the total revenue curve under the demand curve in Question 5a. [3]



c Using your understanding of the concept of price elasticity of demand, explain why total revenue is maximized at the mid-point of a linear demand curve, i.e. at \$5 in the above example. [3]

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Cross price elasticity of demand (XED)

1 Explain why the cross price elasticity of demand (XED) for complementary goods is negative. [2]

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- 5 The table below shows the price and quantity demanded for two products, A and B. Calculate the XED when the price of Product A falls from \$5 to \$4.50. [2]

Price of Product A (\$)	Quantity demanded of Product A	Quantity demanded of Product B
5.00	25	50
4.50	30	60

Income elasticity of demand (YED)

- 1 Calculate the income elasticity of demand (YED) for tea if a 3% increase in real household income causes sales of tea to rise from 100 million to 101 million units. Comment on what this suggests about tea as a product. [3]
- 2 Assume the income elasticity of demand for cigarettes in a particular country is known to be +0.14.
- a If there is a 3.5% increase in real household income, explain what happens to the demand for cigarettes. [2]
- b Using your answer to Question 2a, briefly explain what the figure suggests about the demand for cigarettes in that country. [2]
- 3 Suppose that real household income in France is expected to rise by 1% this year. Calculate the sales volume for the following products:
- a Chanel perfume, given sales of 50,000 units in the previous year and a known income elasticity of demand of +3.25. [2]

- b Carrefour own-branded extra-value sausages, given sales of 2 million units in the previous year and a known income elasticity of demand of -6.5 . [2]

- 4 Suppose in a country the average annual income increases from \$28,000 to \$29,400, which results in the average household increasing the number of cinema visits from 6 to 8 times a year. Calculate the YED for visits to the cinema and comment on your findings. [3]

- 5 Study the estimates of the YED for various products in a country, then answer the questions that follow.

Product	YED (estimate)
Petrol (gas)	+0.25
Soft drinks	-0.33
Domestic holidays	+1.36
Public transportation	-0.22

- a Identify one inferior good and one luxury good from the products shown in the table. [2]

- b Explain which of the given suppliers would gain the most from an economic boom. [2]

- c Explain which of the given suppliers would gain the most from an economic downturn (recession or slump). [2]

- d If average household income increases by 3.5%, calculate the percentage change in the demand for public transportation and domestic holidays. [2]

- e Using the figures in the table, explain why the government is more inclined to tax petrol (gas) rather than to tax providers of domestic holidays. [3]

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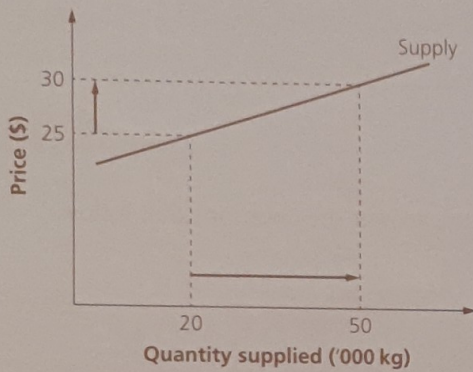
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Price elasticity of supply (PES)

- 1 Calculate the value of price elasticity of supply from the diagram below, if price rises from \$25 to \$30. [2]



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- 2 The daily demand and supply functions for burgers at a market stand are expressed as $Q_d = 100 - 10P$ and $Q_s = -50 + 20P$.
- a Calculate the equilibrium price and quantity. [3]

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- b Complete the Quantity demanded and Quantity supplied columns in the table below. [2]

Price (\$ per burger)	Quantity demanded ($Q_d = 100 - 10P$)	Quantity supplied ($Q_s = -50 + 20P$)
3		
4		
5		
6		
7		

- c Calculate the price elasticity of supply (PES) if price increases from \$5 to \$6 per burger. [2]

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d Comment on your answer to Question 2c (the value of the PES). [2]

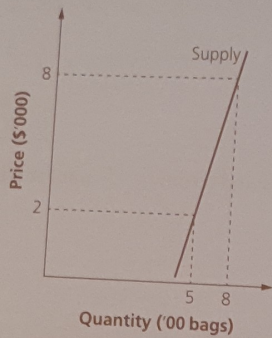
e Assume a rival hotdog stand causes the demand for burgers at the market stand to fall by 15 units at all price levels. Determine the equation of the new demand function. [2]

f Calculate the new equilibrium price and quantity. [3]

3 *Angry Birds* is a highly popular video game created by Finnish company Rovio. More than 12 million customers have paid \$0.99 each to download the game from Apple's App Store. With the use of an appropriate diagram, explain why the high level of demand for *Angry Birds* games has no effect on the selling price. [4]

4 a The price of a restaurant meal is \$6 and the daily quantity supplied is 400 meals. If the PES is known to be +1.25, calculate how a fall in price to \$5.40 per meal will affect the quantity supplied, ceteris paribus. [2]

b The supply curve for a particular Chanel handbag is shown in the diagram below.



i Identify the intended sales of Chanel handbags at a unit price of \$2,000. [1]

ii Calculate the value of the price elasticity of supply for Chanel handbags if price quadruples from \$2,000 to \$8,000. [2]

iii With reference to the diagram, explain why luxury handbags made by Chanel have a steep supply curve. [3]

5 Suppose the output of a health product is given by the supply function $Q_s = -180 + 5P$. Answer the questions that follow.

a Calculate the price required in order for the product to be supplied. [2]

b Calculate the price elasticity of supply (PES) if the price rises from \$40 to \$45. [2]

1.3 G

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Demand
30,000
25,000
20,000
15,000
10,000
5,000

b Define

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2 The table be

Qd	P
3,000	
4,000	
5,000	
6,000	
7,000	
8,000	
9,000	

- c Calculate the PES if the price of the health product falls from \$48 to \$45. [2]

- d Explain why the PES of the health product might be so price elastic. [2]

1.3 Government intervention

Indirect taxes/Subsidies/Price controls

- 1 The table below shows the demand and supply schedules for Product Y.

Demand	Price (\$)	Supply
30,000	10	12,000
25,000	15	16,000
20,000	20	20,000
15,000	25	24,000
10,000	30	28,000
5,000	35	32,000

- a Identify the equilibrium price of Product Y. [1]

- b Define the term 'price ceiling'. [2]

- c Briefly explain the impact of the government imposing a price floor of \$25 for Product Y. [2]