UNIVERSITY OF JOHANNESBURG

DEPARTMENT OF ECONOMICS AND ECONOMETRICS

ECONOMICS 2B

FINAL ASSESSMENT: DECEMBER 2016

APK & SOWETO CAMPUSES

DATE: 1/12/2016

ATTENDANCE SLIP

Surname: ………………………………………………………...........

Initials: ……………………………………………………........................

Student number: ………………………………………..........................

Cell number:...

- **This paper consists of 14 pages.**

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ECONOMICS 2B

FINAL ASSESSMENT: DECEMBER 2016

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DATE: 1/12/2016
MARKS: 100
TIME: 2 HOURS
ASSESSORS: Prof G van Zyl, Mr M Sekome
MODERATOR: Dr P Bauer

SURNAME	
INITIALS	
STUDENT NUMBER	
CELL NUMBER	

Mark schedule

	Mark		Mark		Mark		Mark
Q1		**Q2**		**Q3**		**Q4**	
1.1 [12]		**2.1 [2]**		**3.1 [4]**		**4.1 [6]**	
1.2 [5]		**2.2 [4]**		**3.2 [6]**		**4.2 [4]**	
1.3 [6]		**2.3 [9]**		**3.3 [2]**		**4.3 [5]**	
1.4 [3]		**2.4 [5]**		**3.4 [2]**		**4.4 [6]**	
1.5 [2]				**3.5 [6]**		**4.5 [6]**	
1.6 [2]						**4.6 [3]**	

Total mark :

Question 1: Optimisation and the input base **[30]**

1.1 Camco (Pty) Ltd is contemplating the introduction of two new product lines. Product A will sell for R300 000 per unit and product B for R200 000 per unit. In order to introduce these new product lines the manufacturer must consider the following:

Fixed capital outlay cap (technology and fixed costs) = R800m
Operating cost outlay cap (production costs, marketing & admin expenses) = R800m
Human resource outlay cap (all skill levels) = R400m

The firm has decided that product A is the main product line ('flagship'). Technically the total fixed cost outlay is for product A but product B will be produced on the same production line. Production schedules/runs will cater for this state of affairs. The estimated required outlay for a unit of product A is R200 000 (60% fixed cost, 20% operating cost and 20% human resource costs). The estimated cost outlay for a unit of product B is R100 000 (70% operating cost and 30% human resource costs). **(12)**

Question	Answer
State the primal problem and the constraint equations.	
Illustrate the feasible region with the aid of a diagram. (**Model X on the vertical-axis and Model Y on the horizontal-axis)**	
Show the corner point solutions.	
Final solution.	

1.2 Assume that Jane and Ann having to decide on the adoption of strategies A and B. Assume the following payoff matrix. **(5)**

			Ann	
		Strategy A		**Strategy B**
	Strategy A	R300m for Jane & R400m for Ann		R200m for Jane & R0 for Ann
Jane				
	Strategy B	R400m for Jane & R300m for Ann		R300m for Jane & R400m for Ann

Assume rational behaviour for both players. What is the solution of the game?	
Is there a prisoner's dilemma?	
Ann is unsure about the rational behaviour of John. Apply the maximin strategy concept and indicate the solution of the game?	

1.3 Assume capital to be measured on the vertical axis and labour on the horizontal axis. The result of an increase in the production budget, ceteris paribus, is **[a change or no change]** in the price ratio of the two inputs.
As a result of the production budget increase the equilibrium ratio of the marginal products will **[increase or remain the same]**.
A simultaneous decrease in the price of capital and an increase in the price of labour will result in **[a capital-intensive biased capital and labour cost change or a labour-intensive biased capital and labour cost change]**.
A capital-intensive labour cost change entails a **[greater or smaller]** labour-intercept, ceteris paribus, and a labour-intensive biased cost change entails a **[greater or smaller]** capital-intercept.
When technological economies of scale are realised, the long-run total cost curve increases at **[a decreasing rate or an increasing rate]**. **(6)**

1.4 Assume the following figure. **(3)**

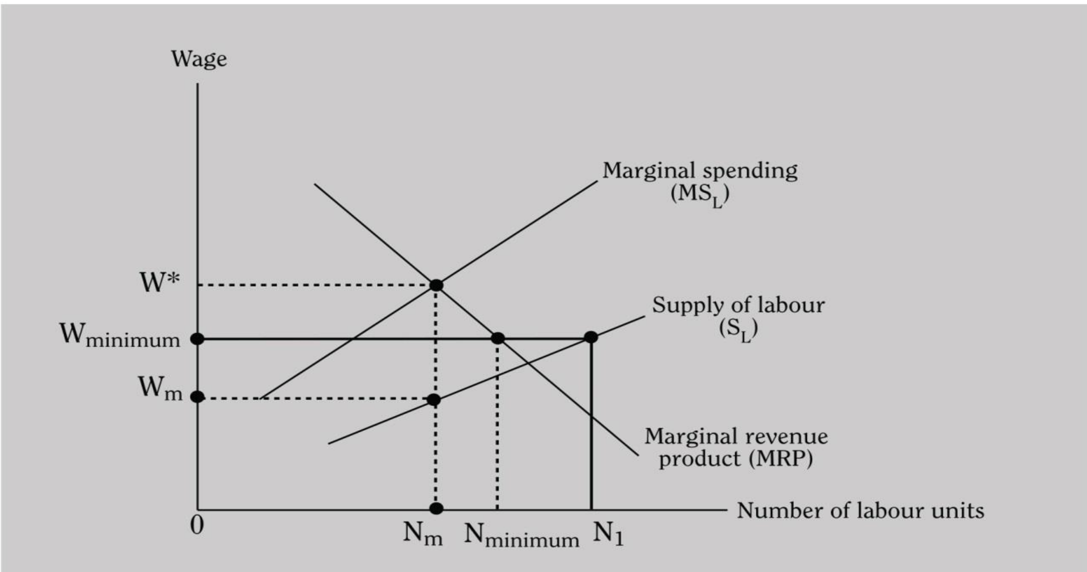


Figure B14: Impact of minimum wage on monopsonists.

Assume no minimum wages. 1. What is the wage that the monopsonist would prefer to pay? 2. What is the number of employees that the monopsonist would prefer to employ? 3. If it was a perfect competitive market, would the wage paid to workers be lower or higher than the wage that the monopsonist is willing to pay?	
Assume a minimum wage situation. 1. What is the number of employees that are willing to work at the minimum wage? 2. What is the number of employees that will be employed by the monopsonist? 3. What will the impact on employment be if the minimum wage is increased?	

1.5 Indicate which of the following statements are correct/incorrect (mark with an X). **(2)**

Statement	Correct	Incorrect
1. In the determination of the rental rate of capital, the following factors are necessary: tax, interest rate, depreciation rate, the purchase price of capital and total sales.		
2. A higher discount rate will result is higher PV.		
3. If there is greater future consumption compared to current consumption than the slope of future consumption over current consumption is steeper.		
4. A competitive firm is a price taker of the price of inputs.		

1.6 Assume an isoquant map where capital is denoted on the vertical axis and labour on the horizontal axis. Answer the following questions. (Assume that capital is measured on the vertical axis and labour on the horisontal axis. **(2)**

Question	Answer
What will happen to the ratio of the marginal products if more units of capital are employed? (increase or decrease)	
Would long-run average cost increase or decrease when increasing returns to scale is experienced?	
Assume that the cost of the capital input decreases, ceteris paribus. What would happen to the equilibrium MRTS? (increase or decrease)	
Assume that you are employing more units of capital. What impact would this have on the MRTS? (smaller or bigger)	

Question 2: Consumer behaviour **[20]**

2.1 This question deal with the income-consumption relationship. Indicate with an X which of the following statements is correct or incorrect. **(2)**

Statement	Correct	Incorrect
1. For the normal good case the IC curve has a positive slope.		
2. Inferior goods are represented by IC curves that have negative slopes with a positive income-elasticity coefficient.		
3. The IC curve is a useful device to help generalize about price elasticity and the classification of goods with respect to the consumer's purchase decisions.		
4. The income-elasticity coefficient for a normal good is positive.		

2.2. Complete the table below indicating the implications of a price change in a price elastic and a price inelastic case. Use the real world scenarios to distinguish between the two cases. **(4)**

Case	Indicate whether the case refers to a price elastic or price inelastic situation	Slope of the PC curve (upwards <u>or</u> downwards <u>or</u> horizontal)	Price elasticity of demand for cell phones (zero <u>or</u> one <u>or</u> >1 <u>or</u> <1)	Cross-price elasticity (positive <u>or</u> negative)
1. Assume we have two substitute products namely cell phones and landline phones. Assume further that as a midsummer special, the price of cell phones decreases.				
2. Assume movies and popcorn is regarded as complementary goods. Assume further that the price of movies decreases.				

2.3 You are the marketing director of MTN who sells airtime which is regarded as a normal product. At a meeting it is decided to reduce the price of airtime in an effort to increase sales. Your colleagues are not certain how it will affect the sales of airtime. Will it increase or decrease the sales? Illustrate the income and substitution effect of the decrease in the price of airtime. (Your figure should show the budget lines, indifference curves and the income consumption curves). Clearly show the price effect, the income effect and the substitution effect. **(9)**

Also answer the following questions.

Question	Answer
The income elasticity of a price decrease in airtime is [**positive <u>or</u> negative**]	
The substitution effect of a price decrease in airtime is [**positive <u>or</u> negative**]	
The income effect of a price decrease in airtime is [**positive <u>or</u> negative**]	
The income effect is **[greater <u>or</u> smaller]** than the substitution effect	
What would happen to the demand for airtime if the price decreases? [**increase <u>or</u> decrease**]	
For a Giffen good, the substitution effect will be [**positive <u>or</u> negative**]	

2.4 Consider the concepts listed in the following table. Use the concepts for those missing words in the paragraphs that follow. Only list the applicable concept next to the number indicating the missing concept. **(5)**

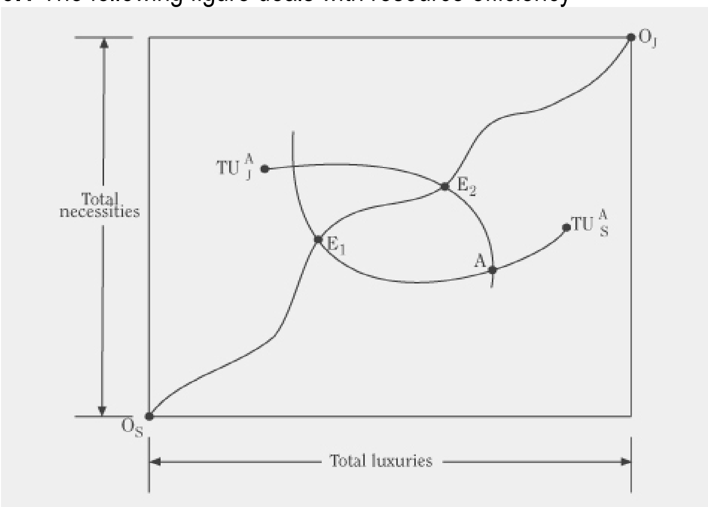
aggregate
credence goods
nature of product
opportunity cost of capital
brand image
Dorfman-Steiner
experience goods
profit level
carry-over
market redistribution
rate of return
product differentiation
retension rate
market expansion
Price-responsiveness

The size of the advertising elasticity is in particular determined by [1]. The fact that an advertisement that tells consumers that a certain kind of margarine is healthier than the other margarines will have a [2] effect by shifting the demand curve for that kind of margarine. Oligopoly advertising is designed more towards a [3] effect. The [4] approach assumes the optimal level of advertising to be based on the highest profit level. According to the [5] approach an increase in the advertising elasticity should increase the advertising to sales ratio. When advertising is analysed as an addition to current assets it should be evaluated in terms of [6] on those assets to be compared to the [7]. If advertising is treated as information, an increase in [8] of advertising increases the proportion of informed buyers. Goods for which a “Hit-and-run” tactic can be profitable in the short run is called [9] goods. According to the “Dynamic response to advertising model” advertisements have a [10] effect on future sales.

Number	Missing concept
[1]	
[2]	
[3]	
[4]	
[5]	
[6]	
[7]	
[8]	
[9]	
[10]	

Question 3: Economic efficiency **[20]**

3.1 The following figure deals with resource efficiency **(4)**



Ring the correct options in the following paragraph.

The slope of each individual’s indifference curve is equal to [**MRS** **(Nec for Lux)** **<u>or</u>** **MRS** **(Lux for Nec)**] The slopes of the total utility curves are **[not equal <u>or</u> equal]** at point A. If the distribution should shift to point E_2 consumer S will be on a **[lower <u>or</u> higher]** utility level whereas if it moves to point E_1 consumer S will be on a **[lower <u>or</u> higher]** utility level.

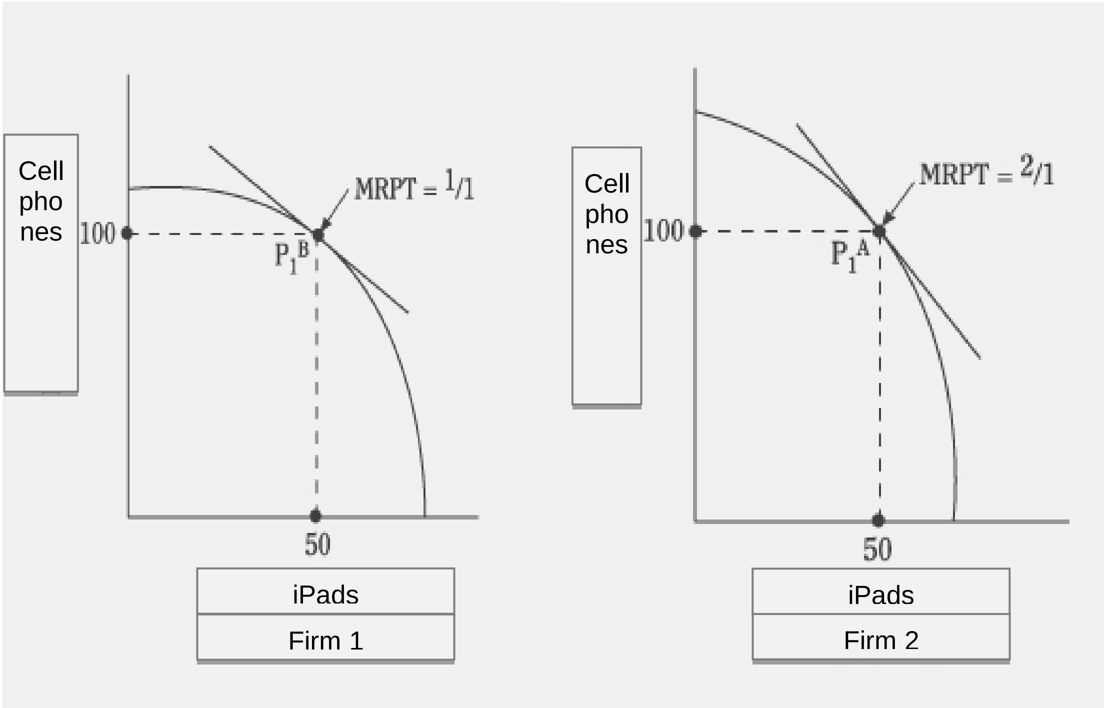
3.2 The following paragraph deals with resource efficiency in terms of Allocation rule 1. Ring the correct options. Assume luxuries are measured on the horizontal axis and necessities are measured on the vertical axis. Ring the correct options in the paragraph below. **(6)**

Allocation rule 1 states that input efficiency will occur if the sets of [**indifference curves <u>or</u> isoquants**] are [**tangent <u>or</u> intersecting**] and where the [**MRS <u>or</u> MRTS**] between [**inputs <u>or</u> outputs**] is the same for each firm. An allocation point not on the contraction curve is a clear indication that the [**MRS's <u>or</u> MRTS's**] are [**equal <u>or</u> not equal**]. The production possibility curve has a [**covex <u>or</u> concave**] shape and the slope is [**negative <u>or</u> positive**] and known as the MRPT [(**of luxuries for necessities) <u>or</u> (of necessities for luxuries)**]. The production possibility curve [**is <u>or</u> is not**] a construct of the contraction curve. The slope of the production possibility curve is equal to [**Δnec ÷Δlux <u>or</u> Δlux ÷Δnec**]. MRPT is also equal to [**MC_{LUX} ÷ MC_{NEC} <u>or</u> MC_{NEC} ÷ MC_{LUX}**].

3.3 The following paragraph deals with resource efficiency.in terms of Allocation rule 2. Ring the correct options. **(2)**

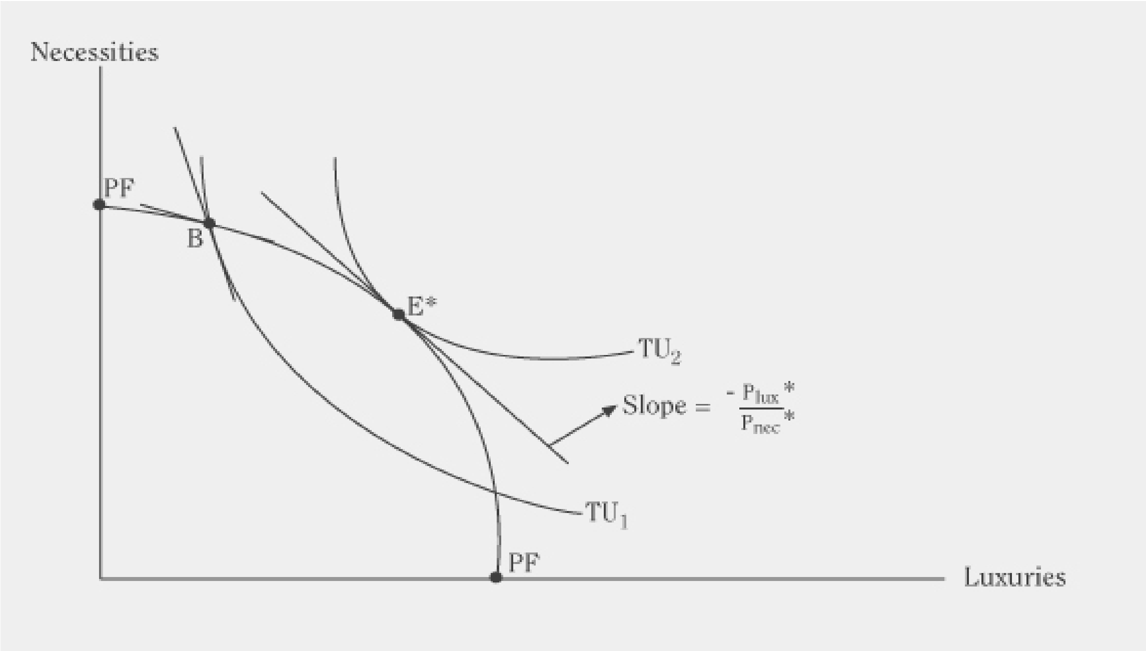
Allocation rule 2 states that for an efficient allocation of labour, the MP_L for firm 1 should be **[higher than <u>or</u> lower than <u>or</u> equal to]** the MP_L for firm 2. If the MP_L for firm 1 > MP_L for firm 2, labour must be shifted from **[firm 1 <u>or</u> firm 2]** to **[firm 1 <u>or</u> firm2]**.This reallocation of labour will **[decrease <u>or</u> increase]** firm 2's output and **[decrease <u>or</u> increase]** firm 1's output, which will **[increase <u>or</u> decrease]** the MP_L for firm 1.

3.4 Assume the following figure relating to Allocation rule 3. Ring the correct options in the paragraph.



According to the figure, productive efficiency can be improved by having firm 1 produce more [**cell phones <u>or</u> iPads**] and less **[cell phones <u>or</u> iPads]**. Firm 2 should produce more **[cell phones <u>or</u> iPads]** and less **[cell phones <u>or</u> iPads]**. **(2)**

3.5 The following figure deals with the inefficiencies of imperfect competition. **(6)**



Question	Answer
1. Which of the two products are produced under monopoly conditions?	
2. Are the MRPT at point B be **smaller <u>or</u> greater** than the MRTS?	
3. For the monopolist would the MR of the product produced be **greater <u>or</u> smaller** than P of that product?	
4. Are the MRTS at point B be **smaller <u>or</u> greater** than the MRTS at point E*?	
5. At point B is **less <u>or</u> more** luxuries produced than is optimal?	
6. At point B is **less <u>or</u> more** necessities produced than is optimal?	

Question 4: Strategic firm behaviour **[30]**

4.1 Answer the following questions relating to the shareholder-management model **(6)**

List and give the equation of each of the 3 financial ratios that reflect the financial policy of the firm and which are combined into a single parameter namely the financial security constraint (fsc)

Name of financial ratio	Equation of financial ratio	Relationship of financial ratio to the financial security constraint (fsc) [**positive <u>or</u> negative**]

Questions	Answer
1. Changes in the financial security constraint (fsc) will affect [**growth in capital g_C <u>or</u> growth in demand g_d**]	
2. The profit margin (pm) is used as a proxy for both **....................** and **..............................**	
3. Assume that the overall fsc increase. What impact would it have on JS (job security)? (Simply mention **reduced <u>or</u> enhanced**).	
4.g_C = [**positively <u>or</u> negative <u>or</u> non-motonic**] correlated with dr	
5. g_d = [**positively <u>or</u> negative <u>or</u> non-motonic**] correlated with dr	
6. If fsc is high, the managers are [**risk averters <u>or</u> risk-takers**].	

4.2 Assume the following figure and answer the questions below. **(4)**

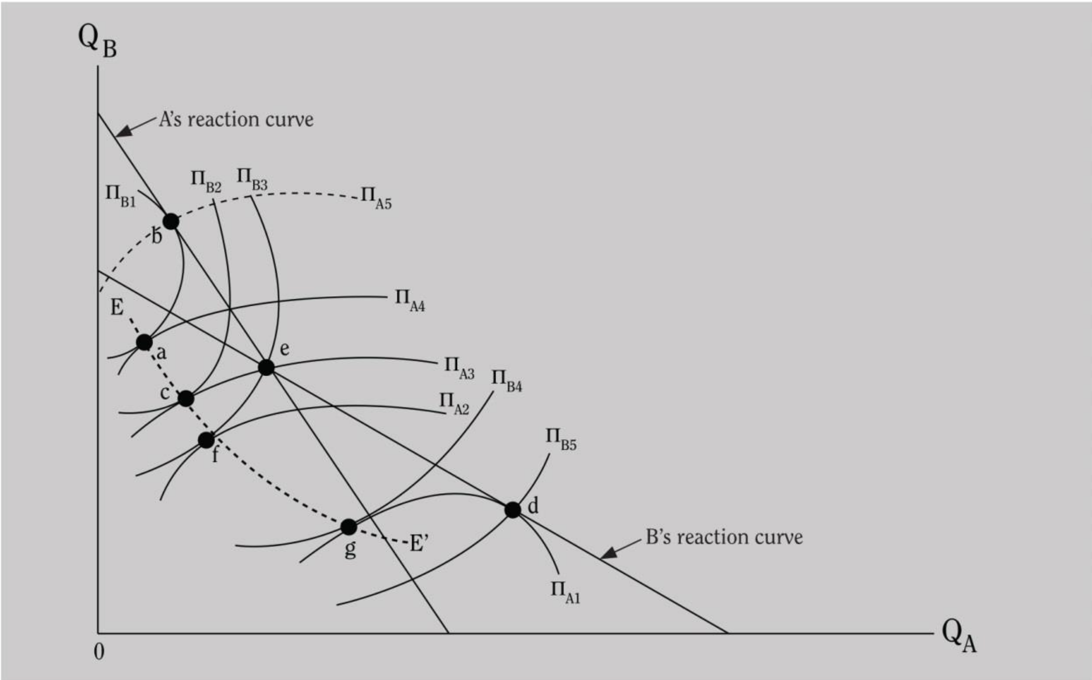


Figure E6: Stackelberg model and industry profits

Assume point ***e*** (Cournot equilibrium). Explain briefly why the two market shares at point ***e*** is not an optimal profit position for the industry.	
Assume that firm B is the dominant leader. What are the optimal profit positions for the two firms.	

4.3 Assume a cartel. Answer the following questions. **(5)**

Explain briefly the manner in which the cartel-price will be set.	
Assume an increase in the marginal cost structures. What impact will it have on i) the cartel-price and ii) on the quota to be allocated to the members of the cartel.	

4.4 Assume the following figure and answer the questions below. **(6)**

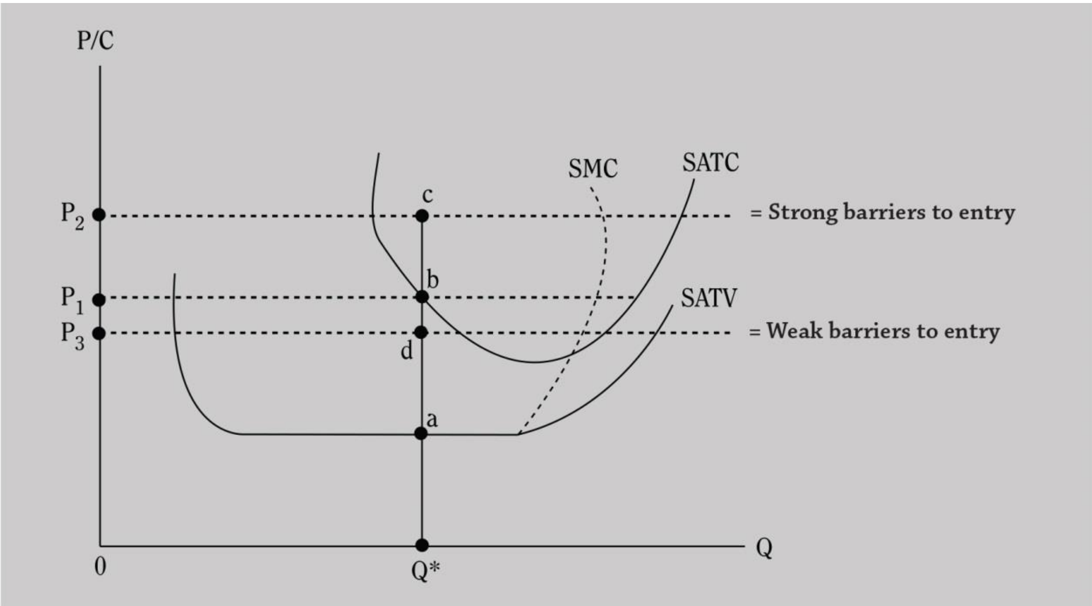


Figure E11: The determination of price

Assume an increase in a specific tax per unit of output. Which cost curve will shift upwards?	
Assume a sudden increase in the level of competition in the market. What will happen to the final price?	
Assume i) that a firm expects to sell 400 units for the next week, ii) that the fixed cost component is estimated to be R4000 for the week, iii) that the variable cost is estimated as $4Q + 0.04Q^2$ and that the mark-up margin is 600%. Calculate the following: 1. GPM. 2. Subjective price.	
What will happen to the final price if there is a suddent increase in the demand for the product?	

4.5 Assume the setting of a transfer price where the external demand for the intermediate product is an imperfectly competitive market.

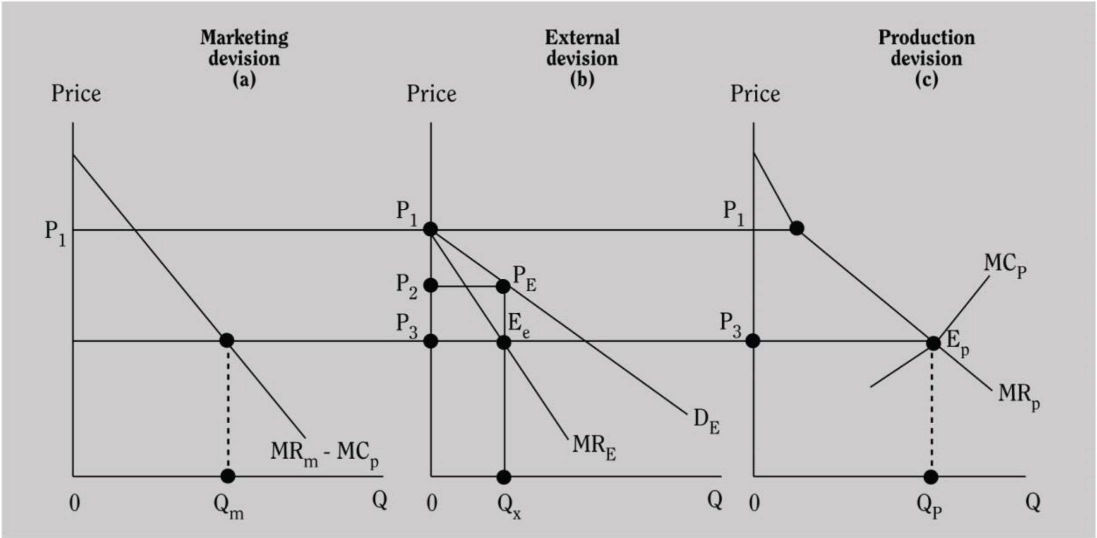


Figure E17: Transfer pricing with an imperfectly competitive market for the intermediate product

Explain briefly how the transfer price is determined and what the transfer price is, what quantity of the intermediate product wil be distributed internally, what quantity of the intermediate product will be sold externally and at what price. **(6)**

Transfer price:

Intermediate product internally:

Intermediate product externally:

4.6 Explain with the aid of a fully-annotated figure the setting of a limit-price. **(3)**

---oOo---