



TENTAMEN / EXAMINATION



12307683

Fylls i av **student** / To be completed by the **student**

Skriv anonymiseringskoden på samtliga svarsblad / Write your anonymity code on each sheet		Anonymiseringskod / Anonymity code	
		N E G A 1 0 - 0 0 1 6 - B Y 0	
Provbenämning / Exam name			Onmald
Skriftlig tentamen mikroekonomi			
Kurskod / Course code	Modul / Module	Tentamensdatum / Examination date	
N E G A 1 0	1 0 0 0	2 0 2 0 - 1 0 - 2 1	
Jag har tagit del av regler som gäller vid tentamen / I have read the current rules for examinations		Antal inlämnade blad med anonymiseringskod / Number of sheets with anonymity code	
<input checked="" type="checkbox"/> Ja / Yes		1 1	

Fylls i av **skrivvakt** / To be completed by the **invigilator**

Kontroll av legitimation / Identification checked	<input checked="" type="checkbox"/> Ja / Yes	Härmed intygas att kontroller utförts / This is to certify that the checks have been carried out
Kontroll av inlämnade blad / Answer sheets checked	<input checked="" type="checkbox"/> Ja / Yes	
Inlämningstid / Time of submission	1 8 : 0 1	Tydlig sign. / Signature elko

Fylls i av **lärare** / To be completed by the **examiner**

Bedömning av uppgifter / Questions attempted										
1	2	3	4	5	6	7	8	9	10	~
2,75	9	9,25				9				
11	12	13	14	15	16	17	18	19	20	~
21	22	23	24	25	26	27	28	29	30	~
Totalt antal poäng / Total points					Examin. lärare / Kursansvarig signatur / Signature of the examiner					
30										
Betyg / Grade					Namnförtydligande / Clarification of the signature					
VG										

12307683

Försättsbladet ska alltid lämnas in även om ingen uppgift behandlats /
Examination should always be submitted even if no questions are answered

Anonymitetskod NEGA 10-0016 - B40

FLERVALSFRÅGOR

(OBS! Endast 1 svar på varje fråga)

FRÅGA	RINGA IN RÄTT SVAR			
1	A	<input checked="" type="radio"/> B	C	D
2	A	<input checked="" type="radio"/> B	C	D
3	A	B	C	<input checked="" type="radio"/> D
4	<input checked="" type="radio"/> A	B	C	D
5	A	B	<input checked="" type="radio"/> C	D
6	<input checked="" type="radio"/> A	B	C	D
7	A	<input checked="" type="radio"/> B	C	D
8	A	<input checked="" type="radio"/> B	C	D
9	A	B	<input checked="" type="radio"/> C	D
10	<input checked="" type="radio"/> A	B	C	D
11	A	B	<input checked="" type="radio"/> C	D
12	A	<input checked="" type="radio"/> B	C	D
13	A	<input checked="" type="radio"/> B	C	D
14	A	B	<input checked="" type="radio"/> C	D
15	<input checked="" type="radio"/> A	B	C	D
16	A	B	<input checked="" type="radio"/> C	D
17	<input checked="" type="radio"/> A	B	C	D
18	<input checked="" type="radio"/> A	B	C	D
19	<input checked="" type="radio"/> A	B	C	D
20	A	B	<input checked="" type="radio"/> C	D

10R

9P

Fel svar ger ej poängavdrag.

No points will be deducted for the wrong answer

Skriv ej i detta område
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NEGA 10 - 0016 - BYU

Löpande sidnr
Consecutive no:

1

Uppgift nr /
Question no:

1

Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

QUESTION 1

a) THE MARGINAL PRODUCT IS A
MEASURE OF THE INCREASE OR
DECREASE OF OUTPUT (PRODUCTIVITY)

WHEN MARGINALLY INCREASING
AN INPUT LIKE LABOUR. THIS
IS MOST RELEVANT IN THE SHORT-
TERM WHEN OTHER INPUTS LIKE
AS AN EXAMPLE PLANT SIZE IS
HELD FIXED. DIMINISHING MARGINAL
PRODUCT IS WHEN AN INCREASED
AMOUNT OF INPUT WON'T GENERATE
AN INCREASED AMOUNT OF OUTPUT.
MARGINAL PRODUCT IS SUITABLE
TO USE IN THE SHORT TERM.

RETURNS TO SCALE IS A PRODUCTIVITY
MEASURE THAT TRACKS THE SLOPE
OF THE LAC-CURVE (LONG-RUN AVERAGE COSTS)
WHEN THE SLOPE IS NEGATIVE AN
INCREASE IN INPUTS SUCH AS
LABOUR AND/OR PLANT-SIZE WILL
GENERATE INCREASING OUTPUT
RELATIVE TO THE INCREASE IN
INPUT (NEXT PAGE →)

MP is
always
positive
if output
increases
(but sometimes
at a decreasing
rate)

LAC is a
result
of RTS



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NEGA 10-0016 - BYO

Löpande sidnr
 Consecutive no:

2

Uppgift nr /
 Question no:

1

Poäng / Points
 awarded:

25/25

Lärarens
 anteckning
 Examiner's remarks:

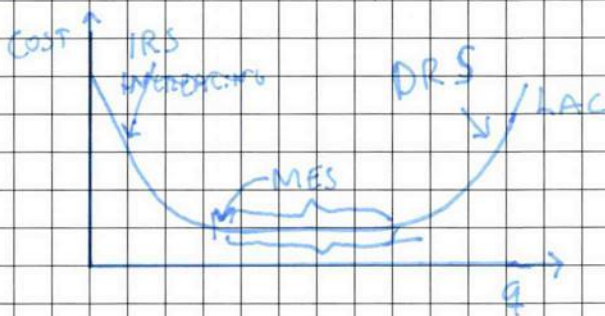
2

QUESTION 1

a) CONTINUED →

WHEN THE SLOPE OF THE LAC IS NEUTRAL (0) WE HAVE REACHED THE MES (MINIMUM EFFICIENT SCALE).

WHEN THE SLOPE OF THE LAC IS POSITIVE INCREASING THE INPUTS WILL INCREASE THE OUTPUT AT A DECREASING RATE THIS IS KNOWN AS DECREASING RETURNS TO SCALE FIGURE BELOW



IRS = INCREASING RETURNS TO SCALE

MES = MINIMUM EFFICIENT SCALE

DRS = DECREASING RETURNS TO SCALE

RETURNS TO SCALE IS SUITABLE TO USE IN THE LONG TERM

Häftområde

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Löpande sidnr
Consecutive no:

3

QUESTION 1

$$Q = 10 \quad AVC = 20 \quad ATC = 50 \quad MC = 30$$

b)

$$ATC = AVC + AFC$$

$$ATC - AVC = AFC \rightarrow 50 - 20 = 30 \rightarrow AFC = 30$$

$$TC = AFC \times Q = 30 \times 10 = 300 \rightarrow FC = 300$$

Uppgift nr /
Question no:

1

Poäng / Points
awarded:

Lärens
anteckning
Examiner's remarks:

iii) AFC IS DECREASING

$$AFC = \frac{FC}{Q} = \text{ALWAYS DECREASING}$$

0,5

R



QUESTION 2

SUPPLY_c = P = 100 + 5Q DEMAND_c = P = 300 - 15Q
 (P/Q = PRICE/QUANTITY) (MARGINAL COST SOCIETY = 20\$/TON)

a)

EQUILIBRIUM POINT IN PERFECT COMPETITION

IS THE POINT WHERE THE SUPPLY/DEMAND

CURVE INTERSECTS. CALCULATIONS →

$$E_q = S = D = 100 + 5Q = 300 - 15Q \rightarrow$$

$$5Q + 15Q = 300 - 100 = 20Q = 200 \rightarrow$$

$$\frac{20Q}{20} = \frac{200}{20} = Q = 10 \text{ EQUILIBRIUM } Q = 10 \text{ TONNES}$$

TO FIND EQUILIBRIUM PRICE WE PUT IN 10 IN

THE SUPPLY OR DEMAND CURVE

EITHER SHOULD GIVE THE SAME

$$\text{NUMBER } P(10) = 100 + (5 \times 10) = 100 + 50 = 150$$

$$(\text{TEST: } P(10) = 300 - (15 \times 10) = 300 - 150 = 150)$$

EQUILIBRIUM PRICE = 150/TON

ANSWER: EQUILIBRIUM QUANTITY = 10,

AND EQUILIBRIUM PRICE = 150\$/TON

b) IF THE NEGATIVE EXTERNALITY

IS CONSTANT AT 20\$ PER TON

THEN SOCIETY'S MARGINAL COST

(SMC) WILL BE THE SAME AS

THE SUPPLY CURVE + THE COST

PER TON OF THE EXTERNALITY

$$MC_e + S_c = SMC = 100 + 5Q + 20 = 120 + 5Q$$

$$SMC = 120 + 5Q$$

ANSWER: SOCIETY'S MARGINAL COST FUNCTION = 120 + 5Q



$$S_c = P = 100 + 5Q \quad D_c = P = 300 - 15Q \quad \text{SME}$$

$$SMC = 120 + 5Q \quad (P/Q = \text{PRICE/QUANTITY PER TON/PER TONNE})$$

c) THE SOCIALLY EFFICIENT QUANTITY OF THE GOOD WILL BE FOUND WHERE THE SMC CURVE INTERSECTS THE DEMAND CURVE. CALCULATION \rightarrow

$$S_{EQ} = SMC = D = 120 + 5Q = 300 - 15Q \Rightarrow$$

$$5Q + 15Q = 300 - 120 = 20Q = 180 \Rightarrow$$

$$\frac{20Q}{20} = \frac{180}{20} = Q = 9 \quad S_{EQ} = 9 \text{ TONNES} \quad R \quad 1$$

ANSWER \rightarrow

SOCIETY'S EFFICIENT QUANTITY

IS 9 TONNES

d) TO CALCULATE THE DEAD WEIGHT LOSS I FIRST NEED TO CALCULATE

"SOCIETY'S OPTIMAL PRICE" WHICH I GET

BY PUTTING 9 INTO THE SMC

$$\text{CURVE } SMC(9) = 120 + (5 \times 9) = 120 + 45 = 165$$

PR = 165

AND THEN FIND PRICE WHEN $Q = 9$

THIS I GET BY PUTTING 9 INTO

THE SUPPLY CURVE

$$S = P(9) = 100 + (5 \times 9) = 100 + 45 = 145 \quad P = 145$$

$$\text{AND } SMC(10) = 120 + (5 \times 10) = 120 + 50 = 170$$

FURTHER CALCULATIONS AND

ILLUSTRATION NEXT PAGE

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Löpande sidnr
Consecutive no:

6

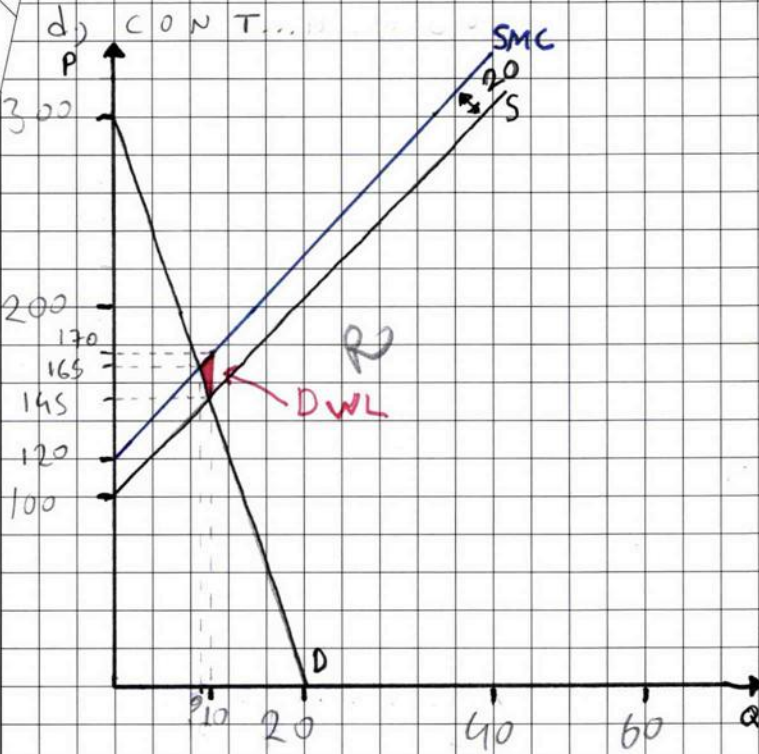
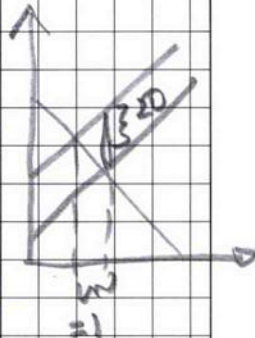
$D = P = 300 - 15Q$ $S_c = P = 100 + 5Q$ $SMC = 120 + 5Q$
 $SE_q = 9$ $PIQ = 70\text{M/TONNES}$

QUESTION 2 CONTINUED

Uppgift nr /
Question no:
2

Poäng / Points
awarded:

Lärens
anteckning
Examiner's remarks:



DWL = AREA WITHIN THE RED TRIANGLE



$\frac{(25 \times 1)}{2} = \frac{25}{2} = 12,5$ $DWL \text{ IS } 12,5\$$

ANSWER THE DEAD WEIGHT LOSS FOR SOCIETY = 12,5\$

2) THE TAX PER TON (UNIT TAX) SHOULD BE AS LARGE AS THE COST OF THE EXTERNALITY THIS WAY THE PRODUCER WILL INTERNALISE THE COST IN THIS CASE THE TAX SHOULD BE 20\$/Tonne THE NEW MARKET PRICE WILL BE $SMC(9) = 120 + (5 \times 9) = 120 + 45 \rightarrow$

ANSWER:
= 165 PRICE WITH NEW TAX = 165
DIAGRAM ON THE NEXT PAGE

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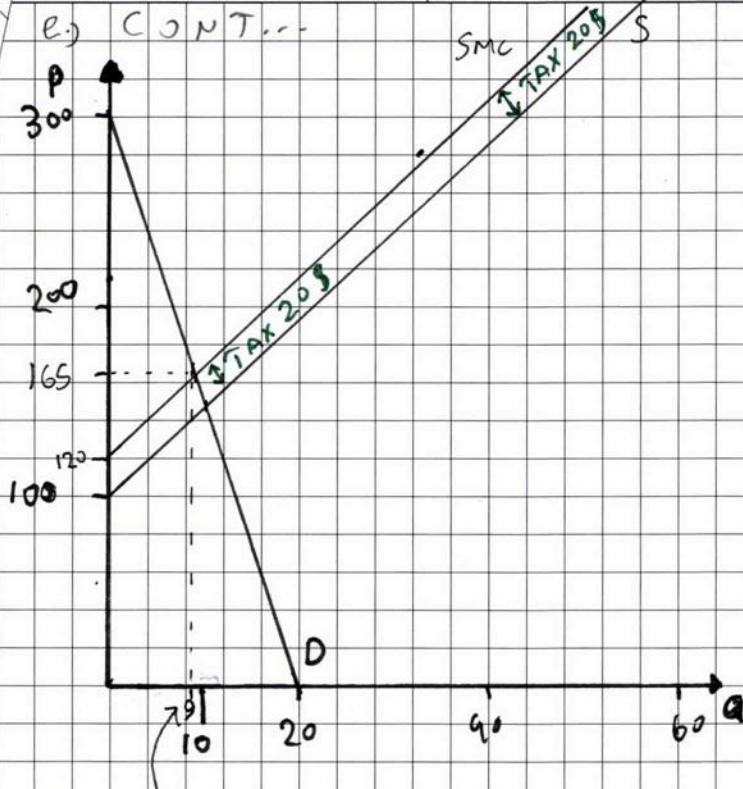


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Löpande sidnr
Consecutive no:

7



SOCIETYS OPTIMAL QUANTITY = 9

NEW PRICE = 165 SMC BECOMES NEW SUPPLY

f.) ANOTHER POLICY MEASURE CAN BE BANNING THE PRODUCTION USING A DANGEROUS MATERIAL THIS MEASURE INCURRES A HIGHER COST IN THE SHORT TERM (AND POSSIBLY IN THE LONG TERM) SINCE IT REMOVES ENTIRE PARTS OF MARKETS (AND/OR ENTIRE MARKETS) SINCE IT IS SO COSTLY IT IS RARELY USED BUT ONE EXAMPLE WHERE GOVERNMENTS UNITED AND BANNED AN ENVIRONMENTALLY DANGEROUS MATERIAL WAS IN THE CASE OF FREONS WHICH CAUSED THE OZONE LAYER TO DISAPPEAR.

Uppgift nr /
Question no:
2

Poäng / Points
awarded:

Lärens
anteckning
Examiner's remarks:

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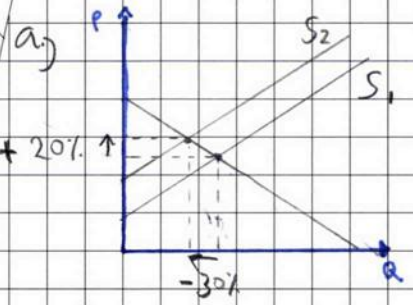
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Löpande sidnr
Consecutive no:

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QUESTION 3)



Uppgift nr /
Question no:

3

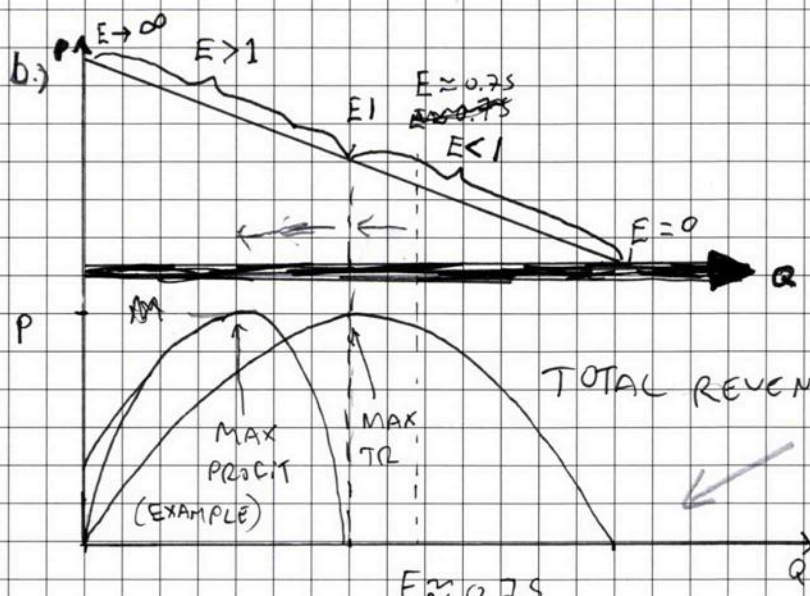
Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

THE ONLY ELASTICITY THAT CAN BE CALCULATED IS THE PRICE ELASTICITY -

OF SUPPLY = $\frac{[\% \text{ CHANGE IN } Q]}{[\% \text{ CHANGE IN PRICE}]} = \frac{30\%}{20\%} \Rightarrow$
 $\frac{0.3}{0.2} = 1.5$ TEST $20 \times 1.5 = 30$ $\frac{30}{1.5} = 20$

ANSWER THE PRICE ELASTICITY OF DEMAND = 1.5



WE HAVE ENOUGH INFORMATION TO KNOW THAT THEY SHOULD INCREASE THEIR PRICE $E_p < 1$ MEANS THAT THE PRICE IS RELATIVELY INELASTIC WHICH MEANS THAT A MARGINAL INCREASE IN PRICE WILL LEAD TO A DECREASE IN Q_d WHICH IS RELATIVELY SMALL IN COMPARISON TO THE PRICE INCREASE

2.75

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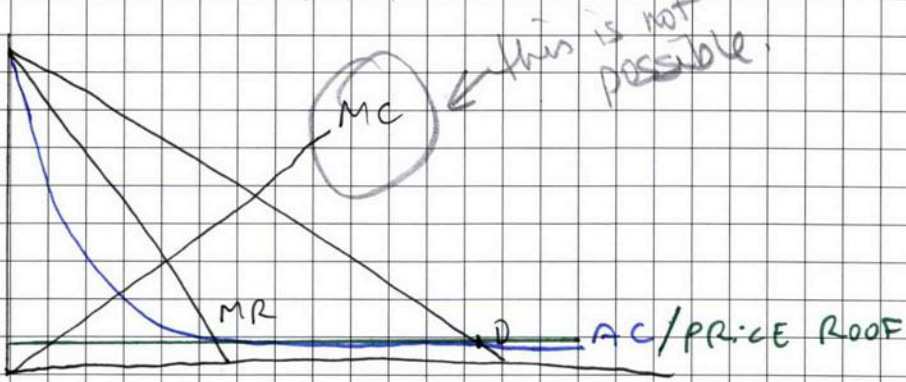
NEGA 10-0016-BY0

Löpande sidnr
Consecutive no:

9

c) A NATURAL MONOPOLY IS CHARACTERIZED BY HIGH COSTS TO ENTER THE MARKET AND FALLING AC. A NATURAL MONOPOLY OCCURS WHEN THERE CAN ONLY BE ONE FIRM OPERATING THE MARKET WITHOUT THE "FIRMS" OPERATING AT A LOSS. EXAMPLES OF NATURAL MONOPOLY MARKETS ARE RAILWAYS, ELECTRICITY GRIDS AND WATER SUPPLY. NATURAL MONOPOLYS ARE A PROBLEM TO SOCIETY SINCE THEY PRACTICE MC-PRICING WHICH CREATES A DEAD WEIGHT-LOSS TO SOCIETY. A WAY TO REDUCE THE DWE IS TO ISSUE A PRICE ROOF AT THE POINT OF AC-PRICING ANY LOWER PRICE FLOOR WILL MAKE THE NATURAL MONOPOLIST TO OPERATE AT A LOSS AND LEAVE THE MARKET RESULTING IN A DWL OF THE ENTIRE MARKET

DIAGRAM 7



Uppgift nr /
Question no:

Poäng / Points
awarded:

3

Lärens
anteckning
Examiner's remarks:

2

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Löpande sidnr
Consecutive no:

10

Uppgift nr /
Question no:
3

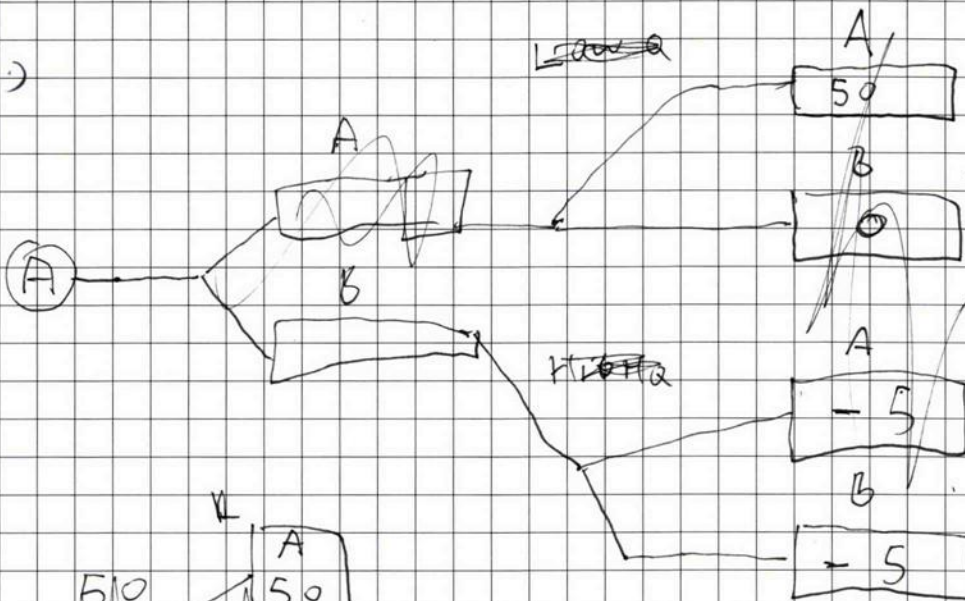
Poäng / Points
awarded:
9.25

Lärens
anteckning
Examiner's remarks:

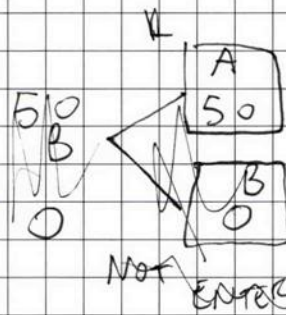
d) THE SIMILARITY IS THAT
BOTH SELL HOMOGENOUS PRODUCTS
AND THUS CANNOT COMPLETE CONTROL
THEIR PRICING. IF THE
INDUSTRY THEY OPERATE IN
GENERATES A POSITIVE ECONOMIC
PROFIT NEW COMPETITORS WILL
ENTER TILL THE ECONOMIC PROFIT = 0

DIFFERENCES
A FIRM IN MONOPOLISTIC
COMPETITION CAN DIFFERENTIATE ITS
PRODUCT AND IS NOT 100% HOMOGENOUS
WHILST A FIRM IN PERFECT COMPETITION'S
PRODUCT IS 100% HOMOGENOUS.

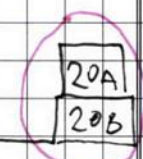
e)



not a tree diagram



15



THE OUTCOME
WILL BE THAT
A CURED ACCOMODATES B DONT ENTER
AND BOTH EARN 20

